

## BAS Upgrade and System Optimization Project

**TCPN Proposal:**

Galion City School District  
470 Portland Way North  
Galion, OH 44833

**Project Location:**

Galion City School District  
470 Portland Way North  
Galion, OH 44833

**Project Title:** BAS Upgrade and System Optimization Project

**Certified Proposal Number:** R150505-OH-10307

**Proposal Date:** May 24, 2016

**Presented to:**

James Grubbs  
Superintendent  
Galion City School District  
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**Presented by:**

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Daikin Applied  
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## Project Overview

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Mr. Grubbs,

Per our previous discussions, there are known operational issues with your existing building automation system (BAS) that is causing on-going issues with the following:

- High School chiller units running on standalone controls
- Network issues with system causing slow or non-existing information updates
- Loss of communication issues with devices on the network
- HVAC systems "hunting" to maintain set point – (VFD's and pumps ramping up/down etc.)
- Inconsistent temperature control throughout the facilities
- Control inputs/outputs are not reading or providing incorrect data
- Ability to properly interface with mechanical systems is reduced or non-existent

The issues listed above are a cursory overview of the known issues with the systems at this time. Additional issues will be identified and corrected as part of the proposed upgrade/optimization solution.

### Reason for Upgrade

The R2 software that was initially installed as the supervisor software for your buildings has become obsolete; there will be no future updates for security, bugs, patches, or licensing of new hardware. In addition, this software cannot be installed on any operating system newer than Windows XP.

### Obsolescence Driving Upgrade – Top Two Levels of System

The supervisory integration software originally installed in your buildings has become obsolete by the manufacturer, creating a need for migration to a new supervisory software package. This migration makes it necessary to retire the TAC Universal Network Controllers, (UNC) in each building. In addition to the replacement of these controllers, there will be a new supervisory and graphic software package engineered and installed. This addresses the need to upgrade the upper two levels of the BAS control system.

### Field controls (Base Level of System Architecture)

Although there is a need to upgrade the supervisory software and hardware, there is no need to replace the field level controls, as they are still currently in manufacturing and are expected to have a long life of updates and availability. Our solution will migrate all of the existing field controls into the new supervisor and optimize the programming and logic that resides in each of the field controllers.

### System Recommissioning and Optimization

There are known problems with the control of the HVAC equipment and systems throughout the district. These issues are reducing the service life of the equipment, while wasting unnecessary energy due to the systems operational inefficiencies. As we proceed with a phased approach of upgrading the BAS systems in each building, we will access the field level of controls and optimize the systems at the control and mechanical systems level. This process will resolve existing control problems, reduce energy consumption and improve overall system performance.

### Reduce Energy Consumption and Operational Savings

With our preliminary review and evaluation of the school district's BAS system and HVAC mechanical system operations, we estimate our solution will provide a 16% - 25% reduction in energy consumption and operational expenditures.

### Results of Implementing the Solution

- Improve occupancy comfort
- Enhance energy efficiency
- Optimize building performance
- Diminish energy consumption and peak demand
- Extend equipment life
- Decrease maintenance cost
- Energy Star Certification of Buildings

## BAS Upgrade and System Optimization Project

### **TCPN Certified Pricing**

Pricing included in this proposal is based on Daikin Applied's TCPN contract (R150505). The total cost for the proposed solution is **\$198,000.00**.

Thank you again for your interest in Daikin Applied. We are very pleased to have this opportunity to offer a solution using our TCPN contract.

Sincerely,

Duane Rothstein  
TCPN Account Manager  
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## Introducing Daikin Applied

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### Our Philosophy

Daikin Applied is your partner in delivering pro-active, responsive solutions for building owners. We incorporate innovation, expertise and technology that will minimize energy consumption and optimize financial incentives and promise responsive lifecycle support. We want to earn your trust that we understand your needs.

### Our Company

**Daikin Industries, Ltd.** is a Fortune 1000 company with 2014 revenues in excess of \$18 billion and more than 40,000 employees worldwide. Daikin is engaged primarily in the development, manufacture, sales and aftermarket support of heating, ventilation, air conditioning and refrigeration, (HVACR) equipment, refrigerants and other chemicals, as well as oil hydraulic products. Daikin is a leader in providing solutions for customers in Asia and Europe. For more information, visit [www.daikin.com](http://www.daikin.com).



**Daikin Applied**, a wholly owned subsidiary of Daikin Industries, Ltd., is a global leader in the design and manufacture of HVAC systems that are unmatched in efficiency, reliability and sustainability. Examples of our innovative technologies include the Magnitude® Magnetic Bearing Centrifugal Chiller and the Pathfinder® Air-Cooled Chiller, both of which are the most efficient chillers available in their respective type and size range.

Daikin Applied has more than six million square feet of manufacturing facilities at 12 plants on three continents. We have offices, service operations, joint ventures and manufacturing facilities with more than 5,000 dedicated employees around the world. All our manufacturing facilities in the United States are ISO 9001 certified. For more information, visit [www.daikinapplied.com](http://www.daikinapplied.com).



Daikin's award winning Applied Development Center at our headquarters in Plymouth, Minnesota, is a sign of our commitment to innovation and customer satisfaction. Opened in May 2009, the Applied Development Center is the world's most advanced facility for HVAC research and development. The purpose of the new center is to develop and test advanced chiller, compressor and other HVAC technologies to reduce energy consumption and ultimately the carbon footprint of the buildings where they will be used.





## Key Team Members

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### Prime Contractor – Daikin Applied

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**Business Name:** Daikin Applied  
**Business Address:** 13600 Industrial Park Blvd.  
Minneapolis, MN 55441  
**Point of Contact:** Duane Rothstein (info below)  
**DUNS:** 172719437  
**Federal Tax EIN:** 41-0404230  
**NAICS Code(s):** 333415, 238220  
**CCR CAGE Code:** 3A3W3  
**Type of Business:** Large  
**TCPN Number:** R150505

**TCPN Account Mgr.:** Duane Rothstein  
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## Scope of Work

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Daikin Applied will provide the material, engineering and technical labor to execute the following scope of work:

### GCSD Facilities: High School, Middle School, Elementary School and P-K School

- Furnish and Install new J-8200 N4 controllers at each school facility
- Engineering and technical labor to migrate existing field controllers to a new J-8200 N4 controllers
- Engineering and technical labor to rewrite logic for J-8200 N4 controllers
- Furnish and install new open platform Supervisor software Tridium N4
- Engineering and technical labor to migrate existing plant controllers to the new Supervisor N4 platform
- Engineering and technical labor to rewrite logic for Supervisor N4 platform
- Engineering and technical labor to create and install entire databases on a point to point basis – Approximately 12,000 existing system points now and will grow to 15,000 system points with new system
- Engineering and technical labor to create and install new animated HVAC graphics to interface into each school facility, which will provide control/monitoring of individual HVAC equipment and systems
  - Each HVAC system and unitary equipment will have individual animated graphic pages.
- Technical labor to create and install dynamic floor plans for each school facility and zones of buildings where applicable
- Technical labor to troubleshoot and resolve network and communication issues with control system

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- Technical labor to troubleshoot issues with excessive control system alarms.
- Technical labor to validate proper operation of main HVAC systems - (Air Handler Units, Boilers, Pumps, Chillers, Cooling Towers, Main Heat Pump Units, Energy Recovery Unit, Exhaust Fans)
  - This validation will include verification of proper control of HVAC systems and their associated control components.
- Technical labor to recommission each unitary piece of equipment via the new control interface and hands on diagnostics as required.
- Engineering and technical labor to optimize control of outdoor air make-up for each system, where applicable
- Engineering and technical labor to ensure proper building pressurization control of each facility
- Technical labor and engineering to provide optimal start/stop of HVAC systems
- Engineering and technical labor to develop and implement controls strategies to reduce electrical consumption and peak demand charges.
- Engineering and technical labor to rewrite control logic in field controllers to optimize programming, which will resolve issues with equipment operation.
- Technical labor to work with IT personnel and networking
- Engineering to updating wiring prints to reflect field changes to the existing
- Engineering and technical labor to apply for utility rebates if available
- Provide training as needed
- Provide 3-years software maintenance
- 5-Year service and support of BAS system – Quarterly onsite inspections – Remote Support

### Warranty

- 1-year warranty from substantial completion on all new hardware and labor
- 3- years software upgrades and security patches including labor
- 1-year labor warranty on programming and engineering
- All warranty labor covered by this agreement is during regular working hours. Work requested to be done outside these hours are subject to a charge of ½ the preferred hourly rate.
- This warranty does not cover existing equipment, communication cabling or existing controls. Work requested to be completed for existing controls or mechanical equipment is subject to preferred labor rates.
- All covered labor warranty is during regular working hours, off time labor billed at half of rate

### Service and Support

Daikin Applied and its partner(s) will provide ongoing service and support of the hardware and software optimized as part of the proposed solution. We will conduct quarterly onsite inspections of the building automation system and will also provide remote support as necessary. The service will be available for 5-years and is included as part of the proposed solution.

## TCPN Price Breakdown

The following table summarizes pricing per Daikin Applied's TCPN contract (R150505).

Item	Item/Description
1	Labor
2	Parts/Materials/Misc. Supplies
<b>Total Proposed Net Pricing (Excluding Sales Tax)</b>	
	<b>\$ 198,000.00</b>

### Notes

- Purchase Orders are to be issued to Daikin Applied; see page 6 for additional information
- A Tax Exempt Certificate shall be submitted with the Purchase Order to avoid paying sales tax
- Pricing is valid for 60 days

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### Exclusions / Clarifications

- Owner shall provide a static IP address for the new N4 platform (server) which will reside on the school IT network.
- Owner shall provide a network drop for connecting the server to the school network. It is preferred that the server is located in a network data room and provided with an uninterruptable power supply (UPS).
- Replacement or repair of any BAS or control system components is not included, unless specifically noted.
- Field configuration of unitary equipment controllers is not included.
- Only available network variables currently existing on the BAS network can be discovered and displayed at the BMS for monitoring and control.
- Owner to provide a static IP address for the new BMS WEB controller which will reside on the school IT network.
- **Remote access to BMS via broadband internet service must be provided to Daikin Applied and associated control partners. The BMS must be accessible remotely to us to perform engineering and support work.**
- The work referenced in the scope of work will be performed during normal business hours.
- Repair or replacement of existing equipment is not included.
- Any work associated with the Fire and Life Safety system is not included.
- Daikin Applied is not responsible for delay costs incurred due to limited or no access to the facility, facility use, occupation and normal lines of business.
- Daikin is only providing the controls specifically listed as included in the above scope of work.
- Sales and/or use tax are not included. If required they will be added to the pricing at the time of invoicing.
- Any energy savings and operational savings are estimates and not guaranteed.
- Removal of Hazardous Waste or Asbestos Abatement is not included.
- Repair, replacement, refurbishing or servicing of existing equipment outside of the scope of work is not included (i.e. local disconnect switch and motor starter).
- Electrical work is not included
- If professional water and/or air balancing services are required to correct system issues, a quotation for these services will be provided for your approval.

### Milestone Billing Schedule

Per this agreement, the amounts listed below will be billed upon substantial completion of work at each location. All payments are due upon receipt.

Milestone	\$
High School - Upgrade/Optimization	\$ 63,418.00
Middle School - Upgrade/Optimization	\$ 51,996.00
Elementary School - Upgrade/Optimization	\$ 41,293.00
Primary School - Upgrade/Optimization	\$ 41,293.00
<b>Total Project Amount</b>	<b>\$ 198,000.00</b>

### Acceptance

Pricing and acceptance are subject to and conditioned upon Owner Representative's acceptance of the attached Contractor Agreement (hereinafter "Agreement"). This Agreement may be amended, changed, modified, or revised with the approval of an authorized representative of Daikin Applied. This proposal is being submitted by Daikin Applied.

\_\_\_\_\_  
Owner Representative

\_\_\_\_\_  
Date

\_\_\_\_\_  
P.O. Number

\_\_\_\_\_  
Daikin Applied Representative

\_\_\_\_\_  
Date



## Terms & Conditions

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### DAIKIN APPLIED AMERICAS INC. Terms & Conditions of Sale (North America)

1. **Terms of Agreement:** The term "Company" as used herein shall mean Daikin Applied Americas Inc. Company offers to sell the materials, equipment or services indicated only under the terms and conditions stated herein. Submittal of any further purchase documents by Buyer, or execution of this offer by Buyer, or allowing Company to commence work, shall be deemed an acceptance of this offer. Any additional or differing terms and conditions contained on any documents prepared or submitted by Buyer (whether or not such terms materially alter this offer) are hereby rejected by Company and shall not become part of the contract between Buyer and Company unless expressly consented to in writing by Company.
2. **Price Policy:** All prices are subject to increase upon notice, due to such events as announced increases in the Company's list prices, or increases in labor or material costs.
3. **Terms of Payment:** Terms of payment are subject at all times to prior approval of the Company's credit department. Terms of payment are net 30 days from date of invoice, unless otherwise agreed to in writing by Company. If at any time the financial condition of Buyer or any other circumstance affecting the credit decision does not, in Company's opinion, justify continuance of production of products or shipment of products on the terms of payment specified, Company may require full or partial payment in advance, or may at its sole discretion stop or delay production or shipment of products. In the event of default in payment, Buyer agrees to pay all costs of collection incurred by Company, including but not limited to, collection agency fees, attorneys' fees, legal expenses and court costs. All past due amounts shall bear interest at the highest rate allowed by law.
4. **Shipping Terms:** All shipments will be made F.O.B. factory or warehouse with freight prepaid and allowed as quoted via a low cost common carrier, and charges for special carrier services requested by Buyer shall be paid by Buyer. Company may ship the goods in one or more lots; such lots may be separately invoiced and shall be paid for when due per invoice, without regard to subsequent deliveries. Delay in delivery of any lot shall not relieve Buyer of its obligation to accept remaining deliveries.
5. **Claims:** Responsibility of Company for all shipments ceases upon delivery of the goods to the carrier; and regardless of shipping terms or freight payment, Buyer shall bear all risk of loss or damage in transit. Any claims for damage or shortage in transit must be filed by Buyer against the carrier, and not Company. Claims for factory shortages will not be considered unless made in writing to Company within ten (10) days after receipt of the goods and accompanied by reference to Company's bill of lading and factory order numbers.
6. **Taxes:** The amount of any present or future taxes applicable to the product shall be added to the price contained herein and paid by Buyer in the same manner and with the same effects as if originally added thereto.
7. **Cancellations:** Accepted orders are not subject to cancellation without Company being (a) reimbursed for any and all expenses (including overhead), (b) paid a reasonable profit, and (c) indemnified by Buyer against any and all loss.
8. **Shipment Dates:** Shipment dates are only estimates. No contract has been made to ship in a specified time, unless set forth in a separate writing signed by an officer of Company. Company shall not be liable for any damage as a result of any delay or failure to deliver due to disapproval of Company Credit Department or due to any cause beyond Company's reasonable control, including without limitation, any act of God, act of Buyer, governmental act, accident, labor unrest, delay in transportation, or inability to obtain necessary labor, materials or manufacturing facilities.
9. **Returns:** Goods may not be returned unless Buyer obtains the advance written permission of an authorized Company official, and when so returned will be subject to handling and transportation charges. Authorized returned goods must be shipped prepaid to the location designated by the authorization.
10. **Limited Warranty:** Subject to sections 11 and 12 herein, Company warrants that it will, at its option, repair or replace defective parts in the event any product manufactured by Company, sold hereunder and used in the United States or Canada, proves defective in material or workmanship within twelve (12) months from initial start-up, or eighteen (18) months from date of shipment, whichever period expires sooner. Replaced parts are warranted for the duration of the original warranty period. THIS WARRANTY CONSTITUTES BUYER'S SOLE REMEDY. IT IS GIVEN IN LIEU OF ALL OTHER WARRANTIES. THERE IS NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. No liability shall attach to Company until Company has been paid in full for all products purchased hereunder. No person (including any agent,

sales representative, dealer or distributor) has the authority to expand Company's obligation beyond the terms of this express warranty, or to state that the performance of any product is other than is published by Company. Company must receive a startup Registration Form for products containing motor compressors and/or furnaces within ten (10) days of original product startup, or the startup date and ship date will be deemed the same for warranty period determination, and the warranty shall expire twelve (12) months from that date.

11. **Warranty Exclusions:** Company's warranty set forth in section 10 does not apply to any products or parts which (a) have been opened, disassembled, repaired, or altered by anyone other than Company or its authorized service representative; or (b) have been subjected to misuse, negligence, accidents, damage, or abnormal use or service; or (c) have been operated, installed, or startup has been provided in a manner contrary to Company's printed instructions, or (d) were manufactured or furnished by others and which are not an integral part of a product manufactured by Company. Refrigerants, fluids, oils and expendable items such as filters are not covered by Company's warranty. For additional consideration Company will provide an extended warranty(ies) on certain products or parts thereof. The terms of any extended warranty(ies) are shown on the product limited warranty certificate or on a separate extended warranty statement.
12. **Limitation on Liability; Indemnity:** Company's liability with respect to the products sold hereunder shall be limited to the warranty provided in section 10 hereof, and shall not exceed the lesser of (a) the cost of repairing or replacing defective products, or (b) the original purchase price of the products. IN NO EVENT AND UNDER NO CIRCUMSTANCES SHALL COMPANY BE LIABLE FOR INCIDENTAL, INDIRECT, SPECIAL, CONTINGENT OR CONSEQUENTIAL DAMAGES, WHETHER THE THEORY BE BREACH OF THIS OR ANY OTHER WARRANTY, NEGLIGENCE OR STRICT LIABILITY IN TORT.
13. **Infringement:** Company will, at its own expense, defend any suits that may be instituted by anyone against Buyer for alleged infringement of any valid United States patent, trademark or copyright in existence on the date of this contract relating to any products sold hereunder that are manufactured by Company, provided Buyer (i) shall have made all payments then due hereunder, (ii) shall give Company immediate notice in writing of any such suit and transmit to Company immediately upon receipt all processes and papers served upon Buyer, and (iii) shall permit Company, either in the name of Buyer or the name of Company, to defend the same and give Company all needed information, assistance and authority to enable it to do so. If such products are in such suit held in and of themselves to infringe any such patent, trademark or copyright, Company will pay any final award of damages in such suit to the extent attributable to such infringement. Notwithstanding the foregoing, Company shall not be responsible for any settlement made without its written consent, or for infringements of combination or process patents covering the use of the products in combination with other goods not furnished and manufactured by Company.
14. **Disputes and Choice of Law:** This contract and these Terms and Conditions of Sale shall constitute the entire agreement between Company and Buyer and shall be governed by and construed according to the laws of the State of Minnesota. All claims, disputes, and controversies arising out of or relating to this contract, or the breach thereof, shall, in lieu of court action, be submitted to arbitration in accordance with the Commercial Arbitration Rules of the American Arbitration Association ("AAA"), and any judgment upon the award rendered by the arbitrator(s) may be entered in any court having jurisdiction thereof. The site of the arbitration shall be Minneapolis, Minnesota, unless another site is mutually agreed between the parties. The parties agree that any party to the arbitration shall be entitled to discovery of the other party as provided by the Federal Rules of Civil Procedure; provided, however, that any such discovery shall be completed within four (4) months from the date the Demand for Arbitration is filed with the AAA.
15. **Canada:** The parties hereto confirm that it is their wish that this contract be drawn up in the English language only; les parties aux présentes confirment leur volonté que ce contrat soit rédigé en langue anglaise seulement.