

C HVAC

ADVERTISEMENT FOR BID

The Kane County Government Purchasing Department will receive sealed bids until 9am Friday August 1, 2009 for:

BUILDING "C" BUILDING AUTOMATION SYSTEM REPLACEMENT

Timetable:

- August 1, 2009 8am Bid packages available
- August 1, 2009 9am Bids due. Public opening
- August 1, 2009 7pm Recommendations presented to Board for consideration
- August 1, 2009 Letter of intent to contractor
- August 1, 2009 Work can begin
- August 1, 2009 All work must be completed

The Kane County Government reserves the right to reject any or all bids or parts thereof, or waive any irregularities or informalities in bidding procedures and to award a Contract in a manner best serving the interest of the County.

INVITATION FOR BID NO. 09-030 Building Automation System	PAGE NO. 1	NO OF PAGES 1	ABSTRACT OF BIDS	** FINAL **
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ISSUING OFFICE
Kane County Purchasing Department
Kane County Government Center
719 Batavia Ave.
Geneva, IL 60134

ARTICLES OR SERVICES

Buildings

09-030 Building Automation System - Bldg. C

OPENING DATE
6/19/2009
TIME
3:00p.m.

NO	(City and State)	Total Cost	Days	Bid Bond	Addendum	SIGNED			
		BAS Project	to Completion	or Check	#1	RESPONSE FORM			
1	Mechanical, Inc. 2279 Yellow Creek Rd., Freeport, IL 61032	\$41,270.00	\$60.00	Bond	Yes	Yes			
2	Johnson Controls, Inc. 3002 Malmo Dr., Arlington Heights, IL 60005	\$39,960.00	\$90.00	Bond	Yes	Yes			
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									

* INDICATE BY A _____ A 60-DAY ACCEPTANCE ** INDICATE BY A _____ IF BID CONFORMS TO DELIVERY TIME SPECIFIED IN IFB	I CERTIFY THAT I HAVE OPENED, READ AND RECORDED HEREIN ALL BIDS RECEIVED IN RESPONSE TO THE INVITATION.	TYPED NAME: TITLE: DATE:	Christopher Rosaman Finance Director SIGNATURE
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BIDS C

STATE OF ILLINOIS
COUNTY OF KANE

RESOLUTION NO 09 -

BUILDING C AUTOMATION SYSTEM

WHEREAS, bids were solicited and received for providing material and labor for building C a new Building Automation System at the Kane County Government Center, 719 S. Batavia Avenue, Geneva, Illinois; and

WHEREAS, Johnson Controls Arlington Heights, Illinois was the lowest responsible bidder for the Base Proposal at a cost of Thirty Nine Thousand Nine Hundred Sixty Dollars (\$39,960.00); was the lowest responsible bidder for the Building Automation System at a cost of Thirty Nine Thousand Nine Hundred Sixty Dollars (\$39,960.00) for a total of Forty One Thousand Nine Hundred Fifty Eight Dollars (\$41,958.00) with a 5% continuance; and

NOW, THEREFORE, BE IT RESOLVED by the Kane County Board, that the Chairman of the Kane County Board is hereby authorized to enter into contract with Johnson Control Arlington Heights, Illinois for the Base Proposal at a cost of Thirty Nine Thousand Nine Hundred Sixty Dollars (\$39,960.00), for a total of Forty One Thousand Nine Hundred Sixty Dollars (\$41,960.00) with a 5% continuance. Funds are to be paid from the Fund, American Reinvestment and Recovery Act Funds - Energy Efficiency and Conservation Block Grant 406.690.717.72010.

Line item	Line Item Description	Was personnel/item/service approved in original budget or a subsequent budget revision?	Are funds <u>currently</u> available for this personnel/item/service in the specified line item?	If funds are not currently available in the specified line item, where are the funds available?
406.690.717.72010	EECBG, Building Improvements	Yes	Yes	

Passed by the Kane County Board on October 13, 2009.

John A. Cunningham
Clerk, County Board
Kane County, Illinois

Karen McConnaughay
Chairman, County Board
Kane County, Illinois

Vote:
Yes _____
No _____
Voice _____
Abstentions _____

10AutoControls

KANE COUNTY
Offer to Contract Form
For
Bid 09-030 Building Automation System

The following offer is hereby made to the County of Kane, Illinois, hereafter called the Owner.

Submitted By: JOHNSON CONTROLS, INC.

1. The undersigned Bidder proposes and agrees, after having examined the specifications, quantities and other contract documents, to irrevocably offer to furnish the materials, equipment and services in compliance with all terms, conditions, specifications and amendments contained in the bid solicitation documents. The items in this Invitation to Bid, including, but not limited to, all required certificates, are fully incorporated herein as a material and necessary part of the contract.
 - A. The Bidder shall also include with his bid any necessary literature, samples, etc., as required within the Invitation to Bid and specification.
 - B. For purposes of this offer, the terms Offerer, Bidder, Contractor, and Vendor are used interchangeably.
2. In submitting this Offer, Bidder acknowledges:
 - A. All bid documents have been examined: Instructions to Bidder, Scope of Work, Sections 17000, 17100, 17200, 17300, 17400, 17500, 17600 and the General Conditions of the Specifications and the following addenda:

No. 1, No. _____, No. _____ (Bidder to acknowledge addenda here.)
 - B. The site and locality has been examined where the Work is to be performed, the legal requirements (federal, state and local laws, ordinances, rules and regulations) and the conditions affecting cost, progress or performance of the Work and has made such independent investigations, as Bidder deems necessary.
 - C. To be prepared to execute a contract with the Owner within ten (10) calendar days after acceptance of the bid by the Owner, and furnish a Performance Bond and Labor Material Bond in accordance with the Instruction to Bidders.

BID AMOUNT:

3. Grand total cost for furnishing and installing the building automation system per specification.

The Sum of: THIRTY NINE THOUSAND NINE HUNDRED Dollars (\$39,900⁰⁰)
SIXTY AND ZERO CENTS

4. The Contractor guarantees completion of all the work within 90 Days after receipt of notice of award or purchase order.

Sealed Bid 09-030 Building Automation System

By signing this Bid, the Offeror hereby certifies that they are not barred from bidding on this contract as a result of a violation of either Section 33E-3 or 33E-4 of the Illinois Criminal Code of 1961, as amended. The awarding of any contract resulting from this Bid will be based upon the funding available to Kane County, which may award all or part of this project. The terms of the Bid and the response shall be incorporated by this reference as though fully set forth into the Contract notwithstanding any language in the contract to the contrary. In the event of any conflict between the terms of the Contract and the terms of the Bid and the response, the terms of the Bid and the response shall govern. Every element or item of the Bid and the response shall be deemed a material and severable item or element of the contract. **THIS SECTION MUST BE SIGNED BY AN AUTHORIZED REPRESENTATIVE OF THE COMPANY OR ENTITY RESPONDING TO THE BID AND THE RESPONSE.**

Signature Adrienne Ferrari Typed Signature ADRIANNE FERRARI
Company JOHNSON CONTROLS, INC.
Address 3007 MALMO DRIVE ARLINGTON HEIGHTS, IL 60005
Phone # (858)364-1500 Fax # (847)364-1548
Federal I.D./Social Security # _____ Date 06/19/09

ACCEPTANCE

The Offer is hereby accepted for the complete project:

The Vendor is bound to sell the materials and services listed by the attached contract and based upon the Invitation to Bid, including all terms, conditions, specification, amendments, and the Vendor's offer is accepted by the County of Kane.

This contract shall henceforth be referred to as Contract Number 09-030. The Vendor has been cautioned not to commence any billable work or to provide any materials or services until this Vendor receives a purchase order and or notice to proceed.

Karen McConnaughay 3-5-2010
Karen McConnaughay Date
Chairman, County Board
Kane County, Illinois

John A. Cunningham 3-5-2010
John A. Cunningham Date
Clerk, County Board
Kane County, Illinois

DELEGATION OF AUTHORITY

The undersigned, President of Johnson Controls, Inc., a Wisconsin corporation, pursuant to the authority vested in him by a certain resolution adopted by the Board of Directors of the Company on January 23, 1980, hereby authorizes

Adriarne Ferrari
Branch Account Manager
Chicago Branch Office
3007 Malmo Drive
Arlington Hts., IL 60005

to perform, on behalf of the Company, the acts described below:

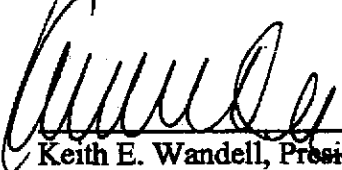
To execute and deliver any and all contracts for the performance of work, sale of goods, and furnishing of services, and any other instruments in connection therewith and in the ordinary course of business.

This authority does not extend to:

- a. the execution of surety, performance or bid bonds;
- b. the signing of any notes, contracts, or any other agreement to borrow money in the name of the Company;
- c. the signing, on behalf of the company, of any deeds, abstracts, offers to purchase or any other instruments pertaining to the purchase or sale of real property; and

This authority shall remain in full force and effect until July 14, 2009.

Signed and sealed at Milwaukee, Wisconsin, this 15 day of January, 2009.



Keith E. Wandell, President

Attest:



Jerome D. Okarma, Secretary

(SEAL)



BID BOND

KNOW ALL BY THESE PRESENTS, That we, Johnson Controls, Inc.

of 5757 North Green Bay Avenue, Milwaukee, WI 53209 (hereinafter called the Principal),

as Principal, and Safeco Insurance Company of America

(hereinafter called the Surety), as Surety are held and firmly bound unto THE LAKE COUNTY

TREASURER

(hereinafter called the Oblige) in the penal sum of 5% BASE BID; FIVE PERCENT BASE BID
Dollars (5% BASE BID)

for the payment of which the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, That WHEREAS, the Principal has submitted or is about to submit a proposal to the Oblige on a contract for 09-030 BUILDING AUTOMATION SYSTEM

NOW, THEREFORE, If the said Contract be timely awarded to the Principal and the Principal shall, within such time as may be specified, enter into the Contract in writing, and give bond, if bond is required, with surety acceptable to the Oblige for the faithful performance of the said Contract, then this obligation shall be void; otherwise to remain in full force and effect.

Signed and sealed this 19 day of JUNE, 2009

Witness

Johnson Controls, Inc. (Seal)
Principal
Meree G. Marciniak
Meree G. Marciniak; Attorney-in-Fact Title

Amy A. Hantzech
Witness

Safeco Insurance Company of America
By Cathy Hutson
Cathy Hutson; Attorney-in-Fact



Johnson Controls, Inc.

DELEGATION OF AUTHORITY

The undersigned, President of Johnson Controls, Inc., a Wisconsin corporation (the "Company"), pursuant to the authority vested in him by a certain resolution adopted by the Board of Directors of the Company on January 23, 1980, hereby authorizes:

Meree G. Marciniak

to perform, on behalf of the Company and/or its subsidiaries, the acts described below:

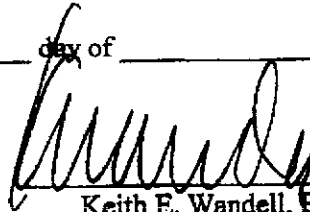
To execute and deliver, as attorney-in-fact for the Company, any and all surety bonds necessary and proper in carrying on the business of the Company.

This authority does not extend to:

- a. the execution of contracts for the performance of work, sale of goods, and furnishing of services;
- b. the collection, receipt and recovery of monies due or to become due to the Company and the issuance of receipts and releases for the payment thereof;
- c. the signing of any notes, contracts, or any other agreement to borrow money in the name of the Company; and
- d. the signing, on behalf of the Company, of any deeds, abstracts, offers to purchase, or any other instruments pertaining to the purchase or sale of real property.

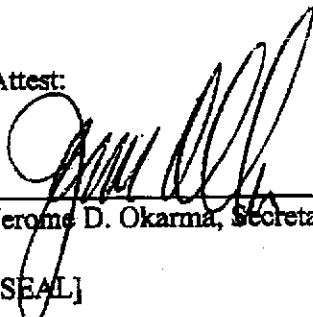
This authority shall remain in full force and effect for six (6) months from the date of issue.

Signed at Milwaukee, Wisconsin, this _____ day of _____



Keith E. Wandell, President

Attest:



Jerome D. Okarma, Secretary

[SEAL]





POWER OF ATTORNEY

Safeco Insurance Company of America
General Insurance Company of America
Safeco Plaza
Seattle, WA 98185

No. 10618

KNOW ALL BY THESE PRESENTS:

That SAFECO INSURANCE COMPANY OF AMERICA and GENERAL INSURANCE COMPANY OF AMERICA, each a Washington corporation, does each hereby appoint

KATHLEEN A. CRARY; CATHY HUTSON; DANIEL J. KWIECINSKI; TRACY K. MATTHEWS; WENDY S. MILLER; DANIEL J. SAPIRO; LISA M. SLAKES; Milwaukee, Wisconsin

its true and lawful attorney(s)-in-fact, with full authority to execute on its behalf fidelity and surety bonds or undertakings and other documents of a similar character issued in the course of its business, and to bind the respective company thereby.

IN WITNESS WHEREOF, SAFECO INSURANCE COMPANY OF AMERICA and GENERAL INSURANCE COMPANY OF AMERICA have each executed and attested these presents

this 7th day of November 2006

Handwritten signature of Stephanie Daley-Watson

Handwritten signature of Tim Mikolajewski

STEPHANIE DALEY-WATSON, SECRETARY

TIM MIKOLAJEWSKI, SENIOR VICE-PRESIDENT, SURETY

CERTIFICATE

Extract from the By-Laws of SAFECO INSURANCE COMPANY OF AMERICA and of GENERAL INSURANCE COMPANY OF AMERICA:

Article V, Section 13. - FIDELITY AND SURETY BONDS ... the President, any Vice President, the Secretary, and any Assistant Vice President appointed for that purpose by the officer in charge of surety operations, shall each have authority to appoint individuals as attorneys-in-fact or under other appropriate titles with authority to execute on behalf of the company fidelity and surety bonds and other documents of similar character issued by the company in the course of its business...

Extract from a Resolution of the Board of Directors of SAFECO INSURANCE COMPANY OF AMERICA and of GENERAL INSURANCE COMPANY OF AMERICA adopted July 28, 1970.

On any certificate executed by the Secretary or an assistant secretary of the Company setting out,

- (i) The provisions of Article V, Section 13 of the By-Laws, and
(ii) A copy of the power-of-attorney appointment, executed pursuant thereto, and
(iii) Certifying that said power-of-attorney appointment is in full force and effect,

the signature of the certifying officer may be by facsimile, and the seal of the Company may be a facsimile thereof.

I, Stephanie Daley-Watson, Secretary of SAFECO INSURANCE COMPANY OF AMERICA and of GENERAL INSURANCE COMPANY OF AMERICA, do hereby certify that the foregoing extracts of the By-Laws and of a Resolution of the Board of Directors of these corporations, and of a Power of Attorney issued pursuant thereto, are true and correct, and that both the By-Laws, the Resolution and the Power of Attorney are still in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the facsimile seal of said corporation

this day of



Handwritten signature of Stephanie Daley-Watson

STEPHANIE DALEY-WATSON, SECRETARY

Safeco and the Safeco logo are registered trademarks of Safeco Corporation.

INSTRUCTIONS TO BIDDERS

**COUNTY OF KANE
COMPETITIVE SELECTION PROCEDURE - BID
TERMS AND CONDITIONS**

1. **AUTHORITY.** This Invitation for Bid is issued pursuant to applicable provisions of the Kane County Purchasing Ordinance.
2. **BID OPENING.** Sealed bids will be received at the Kane County Purchasing Department until the date and time specified at which time they shall be opened in public. Late bids shall be rejected and returned unopened to the sender. Kane County does not prescribe the method by which bids are to be transmitted; therefore, it cannot be held responsible for any delay, regardless of the reason, in transmission of the bids.
3. **BID PREPARATION.** Bids must be submitted on this form and all information and certifications called for must be furnished. Bids submitted in any other manner, or which fail to furnish all information or certificates required, may be summarily rejected. Bids may be modified or withdrawn prior to the time specified for the opening of bids. Bids shall be filled out legibly in ink or type-written with all erasures, strike overs and corrections initialed in ink by the person signing the bid. The bid shall include the legal name of the bidder, the complete mailing address, and be signed in ink by a person or persons legally authorized to bind the bidder to a contract. Name of person signing should be typed or printed below the signature.
4. **BID ENVELOPES.** Envelopes containing bids must be sealed and addressed to the County of Kane Purchasing Department. The name and address of the bidder and the Invitation Number must be shown in the upper left corner of the envelope.
5. **ERRORS IN BIDS.** Bidders are cautioned to verify their bids before submission. Negligence on the part of the bidder in preparing the bid confers no right for withdrawal or modification of the bid after it has been opened. In case of error in the extension of prices in the bid, the unit prices will govern.
6. **RESERVED RIGHTS.** The County of Kane reserves the right at any time and for any reason to cancel this Invitation for Bids, accept or reject any or all bids or any portion thereof, or accept an alternate bid. The County reserves the right to waive any immaterial defect in any bid. Unless otherwise specified by the bidder or the County, the County has ninety (90) days to accept as stated on page 14 under Bid Acceptance Period. The County may seek clarification from any bidder at any time and failure to respond promptly is cause for rejection.
7. **INCURRED COSTS.** The County will not be liable for any costs incurred by bidders in replying to this Invitation for Bids.
8. **AWARD.** It is the intent of the County to award a contract to the lowest responsive responsible bidder meeting specifications. The County reserves the right to determine the lowest responsive responsible bidder on the basis of an individual item, groups of items, or in any way determined to be in the best interests of the County. Award will be based on the following factors (where applicable): (a) adherence to all conditions and requirements of the bid specifications; (b) price; (c) qualifications of the bidder, including past performance, financial responsibility, general reputation, experience, service capabilities, and facilities; (d) delivery or completion date; (e) product appearance, workmanship, finish, taste, feel, overall quality, and results of product testing; (f) maintenance costs and warranty provisions; and (g) repurchase or residual value.

Sealed Bid 09-030 Building Automation System

9. **PRICING.** The price quoted for each item is the full purchase price, including delivery to destination, and includes all transportation and handling charges, premiums on bonds, material or service costs, patent royalties and all other overhead charges of every kind and nature. Unless otherwise specified, prices shall remain firm for the contract period.
10. **DISCOUNTS.** Prices quoted must be net after deducting all trade and quantity discounts. Where cash discounts for prompt payment are offered, the discount period shall begin with the date of receipt of a correct invoice or receipt or final acceptance of goods, whichever is later.
11. **TAXES.** Kane County is not subject to Federal Excise Tax. Per Illinois Revised Statutes, Chapter 120, Paragraph 441: Kane County is exempt from state and local taxes.
12. **SPECIFICATIONS.** Reference to brand names and numbers is descriptive, but not restrictive, unless otherwise specified. Bids on equivalent items will be considered, provided the bidder clearly states exactly what is proposed to be furnished, including complete specifications. Unless the bidder specified otherwise, it is understood the bidder is offering a referenced brand item as specified or is bidding as specified when no brand is referenced, and does not propose to furnish an "equal." The County reserves the right to determine whether a substitute offer is equivalent to and meets the standard of quality indicated by the brand name and number referenced.
13. **SAMPLES.** Samples of items, when called for, must be furnished free of expense and, if not destroyed in the evaluation process, will, upon request, be returned at the bidder's expense. Request for the return of samples must accompany the sample and include UPS Pickup Slip, postage or other acceptable mode of return. Individual samples must be labeled with bidder's name, invitation number, item reference, manufacturer's brand name and number.
14. **INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS.** Bidders shall promptly notify the County of any ambiguity, inconsistency or error which they may discover upon examination of the bidding documents. Interpretations, corrections and changes will be made by addendum. Each bidder shall ascertain prior to submitting a bid that all addenda have been received and acknowledged in the bid.
15. **VARIANCES.** State or list by reference on the reverse side of this form any variations to specifications, terms and/or conditions.
16. **INDEMNIFICATION.** The Seller shall indemnify and hold harmless the County, its agents, officials, and employees, from and against all injuries, losses, claims, suits, costs and expenses which may accrue against the County as a consequence of granting the Contract.

Contractor and/or Servicer's and/or Seller (as case may be), agrees to save, hold harmless, defend and indemnify the County of Kane and its Officers, Agents, and Employees, from any and all liability or loss incurred by the County of Kane resulting from Contractor's and/or Servicer's and/or Seller's noncompliance with any laws or regulations of any governmental authority having jurisdiction over Contractor's and/or Servicer's and /or Seller's performance of this contract and Contractor's and/or Seller's violation of any of the terms and conditions of this Agreement, and from the Contractor's and/or Servicer's and/or Seller's negligence arising from, in any manner and in any way connected with, the terms and conditions of this Agreement and arising from the Contractor's and/or Servicer's and/or Seller's performance thereunder.
17. **DEFAULT.** Time is of the essence of this contract and if delivery of acceptable items or rendering of services is not completed by the time promised, the County reserves the right, without liability, in addition to its other rights and remedies, to terminate the contract by notice effective when received by Seller, as to stated items not yet shipped or services not yet rendered and to purchase substitute items or services elsewhere and charge the Seller with any or all losses incurred.

Sealed Bid 09-030 Building Automation System

18. **INSPECTION.** Materials or equipment purchased are subject to inspection and approval at the County's destination. The County reserves the right to reject and refuse acceptance of items which are not in accordance with the instructions, specifications, drawings or data of Seller's warranty (express or implied). Rejected materials or equipment shall be removed by, or at the expense of, the Seller promptly after rejection.

19. **WARRANTY.** Seller warrants that all goods and services furnished hereunder will conform in all respects to the terms of the solicitation, including any drawings, specifications or standards incorporated herein, and that they will be free from latent and patent defects in materials, workmanship and title, and will be free from such defects in design. In addition, Seller warrants that said goods and services are suitable for, and will perform in accordance with, the purposes for which they are purchased, fabricated, manufactured and designed or for such other purposes as are expressly specified in this solicitation. The County may return any nonconforming or defective items to the Seller or require correction or replacement of the item at the time the defect is discovered, all at the Seller's risk and expense. Acceptance shall not relieve the Seller of its responsibility.

Contractor and/or Seller (as case may be) expressly warrants that all goods and services (real property and all structures thereon) will conform to the drawings, materials, performance and any other specifications, samples or other description furnished by the County, and will be fit and sufficient for the purpose intended, merchantable, of good material and workmanship. Contractor and/or Seller (as case may be) agrees that these warranties shall run to Kane County, its successor, assigns, customers and users of the products or services and that these warranties shall survive acceptance of the goods or performance of the services.

20. **REGULATORY COMPLIANCE.** Seller represents and warrants that the goods or services furnished hereunder (including all labels, packages and container for said good) comply with all applicable standards, rules and regulations in effect under the requirements of all Federal, State and local laws, rules and regulations as applicable, including the Occupational Safety and Health Act as amended, with respect to design, construction, manufacture or use for their intended purpose of said goods or services. Seller shall furnish "Material Safety Data Sheet" in compliance with the Illinois Toxic Substances Disclosure to Employees Act.

21. **EQUAL EMPLOYMENT OPPORTUNITY.** (Res.No. 82-90, 6-10-80; Res. No. 81-79, 6-9-81; Res. No. 82-90, 6-8-82; 05-303, 09-23-05) State law references--Fair Employment Practices Act, Ill. Rev.Stat. Ch. 48, Sec.851 et seq.; requirements for public contracts, Ill. Rev. Stat. Ch. 48, Sec. 854.

22. **PREVAILING WAGE RATES**

WHEREAS, it is the policy of the State of Illinois as declared in "An ACT regulating wages of laborers, mechanics and other workman employed in any public works by the State, County, City or any political subdivision or by any work under construction for public works" approved June 26, 1941, that a wage of no less that the general prevailing hourly rate as paid for work of a similar character in a locality in which work is performed, shall be paid to all laborers, workmen and mechanics employed by and on behalf of any and all public body engaged in public works, exclusive of maintenance work.

PREVAILING WAGE ACT AMENDMENT: HB-1855 (PA 095-0635) amends the Prevailing Wage Act and requires Public Works contractors, before work commences, to file with the Public Body, certification that they have a substance abuse program and provide drug testing. This Act applies to a contract to perform work on a public works project for which bids are opened on or after January 1, 2008, or if bids are not solicited for the contract to perform such work entered into on or after January 1, 2008. The provisions of this Act apply only to the extent there is no collective bargaining agreement in effect dealing with the subject matter of this Act.

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Responsive Bidders must include with their bid a separate sheet showing trades to be employed and wage rates to be paid.

The current Illinois Department of Labor Prevailing Wage Rates for the County of Kane are available at their website <http://www.state.il.us/agency/idol/>. Prevailing wage rates are subject to revision monthly. Copies of the current prevailing wage rates are also available at the Kane County Purchasing Department, 719 Batavia Avenue, Geneva, Illinois.

Any contact within the purview of this resolution or of the Illinois Prevailing Wage Act shall provide that any contractor will employ apprentices who are properly indentured into a **Joint Apprenticeship Training Program** which is registered and certified with the United States Department of Labor, Bureau of Apprenticeship and Training. Failure to comply with the request for information or documentation will be construed as a material breach of the contract enabling the County to terminate the contract, seek forfeiture of any performance bond, and proceed with any other remedy against the contractor at law or inequity.

23. **ROYALTIES AND PATENTS.** Seller shall pay all royalties and license fees. Seller shall defend all suits or claims for infringement of any patent or trademark rights and shall hold the County harmless from loss on account thereof.
24. **LAW GOVERNING.** This contract shall be governed by and construed according to the laws of the State of Illinois.
25. **ELIGIBILITY.** By signing this bid, the bidder hereby certifies that they are not barred from bidding on this contract as a result of a violation of Article 33E, Public Contracts of the Illinois Criminal Code of 1961, as amended (Illinois Compiled Statutes, 720 ILCS 5/33E-1).
26. **CERTIFICATE OF INSURANCE REQUIRED BY KANE COUNTY**
Contractor to furnish and deliver prior to commencement of work, a completed Certificate of Insurance satisfactory to the requirements of County of Kane containing:
- a) The Contractor and all subcontractors shall provide a Certificate of Insurance naming the Owner (Kane County) as certificate holders and as additional insured. The certificate shall contain a 30-day notification provision to the owner (Kane County) prior to cancellation or modification of the policy.
 - b) Commercial General Liability insurance including Products/ Completed Operations, Owners and Contractors Protective Liability and Broad Form Contractual Liability with the exclusion pertaining to explosion, collapse and underground Property Damage hazards eliminated. The limit of liability shall not be less than the following:

General Aggregate	\$2,000,000
Products and Completed Operations	\$2,000,000
Personal and Advertising Injury	\$1,000,000
Each Occurrence	\$1,000,000
or - Combined Single Limit	\$1,000,000
 - c) Business Automotive Liability Insurance including owned, hired and non-owned automobiles with limits of not less than the following:

Each Person for Bodily Injury	\$1,000,000
Each Occurrence for Bodily Injury	\$1,000,000
Each Occurrence for Property Damage	\$1,000,000
or - Combined Single Limit	\$1,000,000

Sealed Bid 09-030 Building Automation System

- d) Statutory Worker's Compensation Insurance, including occupational disease with Employer's Liability limit not less than the following:

Employers Liability:

Each Accident	\$1,000,000
Disease - Policy Limit	\$1,000,000
Disease Each Employee	\$1,000,000

- e) Umbrella Liability

Excess Limits	\$2,000,000
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Contractor to furnish a copy of the Endorsement showing Kane County, as an additional named insured on the General, Auto and Umbrella Liability policies; or provide separate coverage, in the amounts enumerated above, with an Owner's Protective policy.

The Contractor shall cease operations on the project if the insurance is cancelled or reduced below the required amount of coverage.

27. **EQUAL EMPLOYMENT OPPORTUNITY**

The equal employment opportunity clause required by the Illinois Fair Employment Practices Commission is hereby incorporated by reference in all contract made by the county of and in all bid specifications therefore furnished by the county to all bidders, contractors and subcontractors.

The County of Kane, State of Illinois, represents that it and the employing agencies responsible to it, conform to the following:

We do not discriminate against any employee or applicant for employment because of race, creed, color, age, disability, religion, sex, national origin/ancestry, sexual orientation, marital status, veteran status, political affiliation, or any other legally protected status. We will take whatever action is necessary to ensure that applicants and employees are treated appropriately regarding all terms and conditions of employment. We will post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.

We will, in all solicitations or advertisements for employees placed by or on behalf of the employing agencies, state that all qualified applicants will receive consideration for employment without regard to race, creed, age, disability, religion, sex, national origin/ancestry, sexual orientation, marital status, veteran status, political affiliation, or any other legally protected status. (Res.No. 82-90, 6-10-80; Res. No. 81-79, 6-9-81; Res. No. 82-90, 6-8-82; 05-303, 09-23-05) State law references--Fair Employment Practices Act, Ill. Rev.Stat. Ch. 48, Sec.851 et seq.; requirements for public contracts, Ill. Rev. Stat. Ch. 48, Sec. 854.

28. **BID DEPOSIT**

All bids must be accompanied by a Bank Cashier's Check, Bank Draft, Certified Check, or Bid Bond for not less than five (5%) percent of the amount of the Bid, or according to the schedule as provided.

Accompanying this Bid is a Bank Cashier's Check, Bank Draft, Certified Check, or Bid Bond, complying with the requirements of the specifications, made payable to the **KANE COUNTY TREASURER.**

In the event that one check, draft or bond is intended to cover two or more bids, the amount must be equal to the sum of the bid guarantees of the individual sections covered.

29. **EXECUTION OF A PERFORMANCE BOND AND LABOR AND MATERIALS BOND**

When noted in the specifications, the County reserves the right to require the successful bidder to supply a Performance Bond and a Labor and Materials Bond within ten (10) calendar days of acceptance of the Vendor's bid by the County. The bonds, unless otherwise specified by the Director of Purchasing, shall be 100% of the total contract price.

30. **FAILURE TO FURNISH BONDS**

In the event that the Vendor fails to furnish the abovementioned bonds within ten (10) calendar days after acceptance of the bid by the County, then the bid deposit of the bidder shall be retained by the County as liquidated damages, it being now agreed that said sum is a fair estimate of the amount of damages that said County will sustain due to the Bidder's failure to furnish said bonds.

**ILLINOIS DEPARTMENT OF LABOR
Division of Conciliation & Mediation
PREVAILING WAGES FOR KANE COUNTY
EFFECTIVE 5/1/09**

These prevailing wages shall be included in the contracts and their advertised specifications to which any public body, as defined in section 2 of the Prevailing Wage Act (Il. Rev. Stat. 1987, Ch. 48, par. 39s-1), is a party, for the construction, reconstruction, maintenance and/or repair of public buildings or public works within the State of Illinois which requires or involves the employment of laborers, workers, and mechanics, and owner/operators. Minimum wages, overtime rate and fringe benefits certified herein shall be paid. This scale of prevailing wages to be paid shall be posted by the contractor in a prominent an easily accessible place at the site of work.

Trade Name	RG	TYP	C	Base	FRMAN	*M-F>8	OSA	OSH	H/W	Pensn	Vac	Trng
ASBESTOS ABT-GEN	ALL			34.750	35.250	1.5	1.5	2.0	8.830	6.170	0.000	0.270
ASBESTOS ABT-MEC	BLD			29.930	0.000	1.5	1.5	2.0	9.170	9.260	0.000	0.320
BOILERMAKER	BLD			41.230	44.940	2.0	2.0	2.0	6.720	8.940	0.000	0.350
BRICK MASON	BLD			38.030	41.830	1.5	1.5	2.0	8.000	9.970	0.000	0.550
CARPENTER	ALL			39.770	41.770	1.5	1.5	2.0	9.460	7.800	0.000	0.490
CEMENT MASON	ALL			39.000	41.000	2.0	1.5	2.0	7.250	10.81	0.000	0.150
CERAMIC TILE FNShER	BLD			32.150	0.000	2.0	1.5	2.0	6.150	7.370	0.000	0.380
COMMUNICATION TECH	N	BLD		29.960	31.760	1.5	1.5	2.0	5.842	6.290	0.000	0.375
COMMUNICATION TECH	S	BLD		33.360	35.460	1.5	1.5	2.0	9.090	8.670	0.000	0.670
ELECTRIC PWR EQMT OP	ALL			30.490	39.170	1.5	1.5	2.0	4.750	8.530	0.000	0.230
ELECTRIC PWR GRNDMAN	ALL			23.630	39.170	1.5	1.5	2.0	4.750	6.620	0.000	0.180
ELECTRIC PWR LINEMAN	ALL			36.270	39.170	1.5	1.5	2.0	4.750	10.16	0.000	0.270
ELECTRIC PWR TRK DRV	ALL			24.400	39.170	1.5	1.5	2.0	4.750	6.830	0.000	0.180
ELECTRICIAN	N	ALL		40.470	44.510	1.5	1.5	2.0	9.920	9.300	0.000	0.500
ELECTRICIAN	S	BLD		40.390	44.430	1.5	1.5	2.0	8.890	10.10	0.000	0.810
ELEVATOR CONSTRUCTOR	BLD			44.930	50.550	2.0	2.0	2.0	9.525	8.210	2.700	0.000
FENCE ERECTOR	ALL			40.200	42.210	2.0	2.0	2.0	8.140	15.16	0.000	0.230
GLAZIER	BLD			37.000	38.500	1.5	1.5	2.0	7.340	12.05	0.000	0.740
HT/FROST INSULATOR	BLD			39.900	42.400	1.5	1.5	2.0	9.170	10.46	0.000	0.320
IRON WORKER	ALL			40.200	42.210	2.0	2.0	2.0	8.140	15.16	0.000	0.230
LABORER	ALL			34.750	35.500	1.5	1.5	2.0	8.870	6.130	0.000	0.270
LATHER	ALL			39.770	41.770	1.5	1.5	2.0	9.460	7.800	0.000	0.490
MACHINIST	BLD			40.530	42.530	1.5	1.5	2.0	7.000	7.670	0.650	0.000
MARBLE FINISHERS	ALL			28.650	0.000	1.5	1.5	2.0	7.920	9.970	0.000	0.550
MARBLE MASON	BLD			38.030	41.830	1.5	1.5	2.0	8.000	9.970	0.000	0.550
MATERIAL TESTER I	ALL			24.750	0.000	1.5	1.5	2.0	8.870	6.130	0.000	0.270
MATERIALS TESTER II	ALL			29.750	0.000	1.5	1.5	2.0	8.870	6.130	0.000	0.270
MILLWRIGHT	ALL			39.770	41.770	1.5	1.5	2.0	9.460	7.800	0.000	0.490
OPERATING ENGINEER	BLD 1			43.800	47.800	2.0	2.0	2.0	9.600	6.550	1.900	1.000
OPERATING ENGINEER	BLD 2			42.500	47.800	2.0	2.0	2.0	9.600	6.550	1.900	1.000
OPERATING ENGINEER	BLD 3			39.950	47.800	2.0	2.0	2.0	9.600	6.550	1.900	1.000
OPERATING ENGINEER	BLD 4			38.200	47.800	2.0	2.0	2.0	9.600	6.550	1.900	1.000
OPERATING ENGINEER	HWY 1			42.000	46.000	1.5	1.5	2.0	9.600	6.550	1.900	1.000
OPERATING ENGINEER	HWY 2			41.450	46.000	1.5	1.5	2.0	9.600	6.550	1.900	1.000
OPERATING ENGINEER	HWY 3			39.400	46.000	1.5	1.5	2.0	9.600	6.550	1.900	1.000
OPERATING ENGINEER	HWY 4			38.000	46.000	1.5	1.5	2.0	9.600	6.550	1.900	1.000
OPERATING ENGINEER	HWY 5			36.800	46.000	1.5	1.5	2.0	9.600	6.550	1.900	1.000
ORNAMNTL IRON WORKER	ALL			40.200	42.210	2.0	2.0	2.0	8.140	15.16	0.000	0.230
PAINTER	ALL			37.830	39.830	1.5	1.5	1.5	6.750	6.750	0.000	0.550
PAINTER SIGNS	BLD			30.820	34.600	1.5	1.5	1.5	2.600	2.470	0.000	0.000
PILEDRIIVER	ALL			39.770	41.770	1.5	1.5	2.0	9.460	7.800	0.000	0.490
PIPEFITTER	BLD			39.500	41.500	1.5	1.5	2.0	9.200	10.24	0.000	1.060
PLASTERER	BLD			38.100	40.390	1.5	1.5	2.0	7.500	8.440	0.000	0.400
PLUMBER	BLD			39.500	41.500	1.5	1.5	2.0	9.200	10.24	0.000	1.060

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Trade Name	RG	TYP	C	Base	FRMAN	*M-F>8	OSA	OSH	H/W	Pensn	Vac	Trng
ROOFER		BLD		36.400	39.400	1.5	1.5	2.0	6.950	4.670	0.000	0.330
SHEETMETAL WORKER		BLD		40.210	42.210	1.5	1.5	2.0	7.910	9.620	0.000	0.680
SIGN HANGER		BLD		26.070	27.570	1.5	1.5	2.0	3.800	3.550	0.000	0.000
SPRINKLER FITTER		BLD		40.500	42.500	1.5	1.5	2.0	8.500	6.850	0.000	0.500
STEEL ERECTOR		ALL		40.200	42.210	2.0	2.0	2.0	8.140	15.16	0.000	0.230
STONE MASON		BLD		38.030	41.830	1.5	1.5	2.0	8.000	9.970	0.000	0.550
TERRAZZO FINISHER		BLD		33.810	0.000	1.5	1.5	2.0	6.150	9.850	0.000	0.310
TERRAZZO MASON		BLD		37.390	40.390	1.5	1.5	2.0	6.150	11.11	0.000	0.350
TILE MASON		BLD		38.630	42.630	2.0	1.5	2.0	6.150	9.010	0.000	0.500
TRAFFIC SAFETY WRKR		HWY		24.300	25.900	1.5	1.5	2.0	3.780	1.875	0.000	0.000
TRUCK DRIVER		ALL	1	32.550	33.100	1.5	1.5	2.0	6.500	4.350	0.000	0.150
TRUCK DRIVER		ALL	2	32.700	33.100	1.5	1.5	2.0	6.500	4.350	0.000	0.150
TRUCK DRIVER		ALL	3	32.900	33.100	1.5	1.5	2.0	6.500	4.350	0.000	0.150
TRUCK DRIVER		ALL	4	33.100	33.100	1.5	1.5	2.0	6.500	4.350	0.000	0.150
TUCKPOINTER		BLD		38.200	39.200	1.5	1.5	2.0	6.580	9.550	0.000	0.280

In all agreements or contracts for public works with the County of Kane, the individual contractors shall assume the risk of any change in the prevailing rate of wages promulgated by the Illinois Department of Labor.

PREVAILING WAGE ACT AMENDMENT:

HB-1855 (PA 095-0635) amends the Prevailing Wage Act and requires Public Works contractors, before work commences, to file with the Public Body, certification that they have a substance abuse program and provide drug testing. This Act applies to a contract to perform work on a public works project for which bids are opened on or after January 1, 2008, or if bids are not solicited for the contract to perform such work entered into on or after January 1, 2008. The provisions of this Act apply only to the extent there is no collective bargaining agreement in effect dealing with the subject matter of this Act.

STATEMENT OF WORK
For
09-030 Building Automation System

OVERVIEW

The County of Kane is seeking to retain the services from a qualified and experienced contractor to furnish and install a complete Jonson Controls Building Automation System (BAS) as called for in Division 17, Sections 17000, 17100, 17200, 17300, 17400, 17500, and 17600. The project is located in the Kane County Government Center, Building C, 719 S. Batavia Ave., Geneva, IL 60134.

SCOPE OF WORK

SECTION 17000

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. The BAS system shall be comprised of a distributed network of various independent, stand-alone digital controllers.
- B. The engineering, installation, calibration, software programming and check-out necessary for a complete and fully operational BAS system, as specified hereafter, shall be done with factory trained technicians.
- C. The work shall be for a completely electronic direct digital control system, including valves, motorized air dampers and controls, damper actuators, electrical conduit, control and power wiring to controllers.
- D. The complete system shall include all labor, materials and equipment required for the construction of the BAS system. The system shall be complete in all respects, tested and be ready for operation. All materials, equipment and apparatus shall be new and of first-class quality.
- E. All labor for complete operating system including start-up, technical training of Owner's staff and one year warranty for all hardware, software and labor.
- F. BAS Contractor provides all required labor for the installation of the BAS system. Electricians shall be directly employed by BAS Contractor.
- G. BAS Contractor shall furnish and install all conduit, control wiring, interlock wiring, power wiring and devices as part of this contract. Power wiring shall be defined as follows:
 - 1. Wiring of power feeds through a disconnect switch to electric damper motors, valve, meters and transformers.
 - 2. All wiring to BAS panels shall be fed from the nearest spare circuit breaker provided for BAS in electrical panels. Wire control power from emergency power panels.
 - 3. Wiring of any remote start/stop switches for local control of fans.
- H. Furnish and install all transformers required to operate the BAS system and controls.

- I. All 18 VAV box controllers will be field installed by the BAS contractor. See associated specification sections for requirements and coordination.
- J. All control valves, piping trim required for controls, sensors and sensor walls.
- K. All fan air flow differential pressure switches are to be piped in copper. Plastic tube is not acceptable.
- L. BAS Contractor shall furnish and install all work required for a complete operating control system.
- M. BAS Contractor shall determine the number of points required to achieve the sequence of operation, control and interface with all HVAC equipment on this project.
- N. Each Rooftop Unit shall have a dedicated controller.
- O. BAS Contractor to replace controls, Sensors, damper operators (OA, RA, EA) etc, in Three existing rooftop units, VAVs, etc to meet specified sequences. See base bid areas and alternate bid areas.

1.02 Work by Others:

Owner shall install a dedicated telephone line with an RJ 11 jack or Ethernet connection with access to IP network for remote access. Jack shall be mounted next to the master control panel location to be determined at project site.

1.03 Interoperability:

- A. The BAS Contractor will be required to use BacNet standard interoperable protocols to achieve the control sequence of operation.
- B. Interoperability with manufacturer's equipment is required. The means and methods of achieving the control sequences and monitoring equipment points are the BAS contractor's and equipment supplier's responsibility. If the BAS contractor is unable to integrate to the equipment for any reason, he shall install and wire a dedicated controller and, sensors and end devices. BAS Contractor shall carry all costs for installation and wiring as described below.
- C. Single Source Responsibility: The BAS Contractor shall have sole responsibility for all costs (materials and labor) for completing the interoperable interface and has sole responsibility for the successful operation and continued maintenance. If the BAS contractor requires labor or materials which must be purchased from others (Mechanical equipment manufacturers, etc.): The BAS contractor shall include those subcontract and material costs in his bid and shall complete the system integration at no additional cost to the owners or others.

1.04 General Provisions:

The general provisions of the contract, including General Conditions and Supplementary General Conditions, apply to the work specified in this Section.

1.05 Related Documents:

- A. The following Specification Sections shall be included as part of this work:
 - 1. Bidding and Contract Requirements.
 - 2. General Requirements.

1.06 References:

- A. ASTM Gray Iron Casting for Valves, Flanges and Pipe Fittings.
- B. ANSI/ASHRAE 90A - Energy Conservation in New Building Design.

1.07 Regulatory Requirements:

- A. The BAS Contractor is expected to know or to ascertain, in general, the requirements of all codes and ordinances applicable to the construction and operation of systems covered by his contract. He shall know or ascertain the rulings and interpretations of code requirements being made by all authorities having jurisdiction over the work to be performed by him.
 - 1. National Electric Code (NEC).
 - 2. NEMA - National Electrical Manufacturer's Association
 - 3. Underwriter's Laboratories, Inc.
 - 4. OSHA - Occupational Safety and Health Act.
 - 5. International Mechanical Code.
- B. The entire BAS and associated energy management functions shall be in compliance with the FCC Docket #2780. Part 5. Subparagraph B.
- C. Nothing contained in the Specifications shall be construed to conflict with these laws, codes and ordinances and they are hereby included in these Specifications.

1.08 As-Builts:

- A. As-built drawings and product data under provisions of the general conditions and general requirements of the contract and the following:
 - 1. Trunk cable schematic showing master, local and equipment mounted processing unit locations in all equipment rooms.
 - 2. List of connected data points including master and local control panels which are connected and input devices (sensors).
 - 3. Technical specification data sheets of each system component and device.
 - 4. Descriptive data and sequence of operation of all operating and application software, including complete operator's manual and programmer's manual tailored to job.

1.09 Operation and Maintenance Data:

Submit operation and maintenance data under provisions of the general conditions and general requirements of the contract.

1.10 Delivery, Storage, and Handling:

All materials for BAS contract shipped to job site in care of BAS Contractor, who pays for freight charges to site and is responsible for unloading, further handling, storage and protection of materials.

PART 2 – PRODUCTS

2.01 Acceptable Manufacturer:

- A. Johnson Controls
- B. No substitutions

PART 3 - EXECUTION

3.01 Installation:

- A. BAS Contractor is responsible for entire installation and start-up of BAS and all controls.
- B. Install with all controls, cabinets, devices, tubing and conduit mounted to non-vibrating surfaces, i.e.: mechanical HV AC equipment.
 - 1. Install all exposed conduit or copper tubing parallel to building lines.
 - 2. Conceal all conduit and tubing except in equipment rooms or mechanical spaces.
- C. BAS Contractor installs electrical spare circuits and circuit breakers in power panels for equipment furnished by the BAS Contractor.
- D. Exact locations to secure best conditions and results determined at site and subject to Owner's approval.

3.02 Protection of Work:

- A. All necessary cutting and patching of walls, floors, partitions, ceilings etc., required for proper installation of the work under this contract, shall be done at the BAS Contractor's expense in a neat, careful and workmanlike manner.
- B. No concrete joists, beams, girders or columns shall be cut by BAS Contractor without first obtaining the written permission of the Owner.
- C. All drilling and patching for expansion bolts, hangers and other supports shall be done by the BAS Contractor subject to the review of the Owner.

3.04 BAS Acceptance Procedure:

- A. BAS Contractor forwards to Owner submittal data relevant to point address, functions, limits, sequences, interlocks, energy management programs and associated parameters and other pertinent information for operating system and database.
- B. Upon successful completion of total BAS generation, request, in writing that the Owner inspect and approve satisfactory operation of BAS. sub-system(s) and accessories.
 1. BAS Contractor prepares detailed checklist itemizing each cabinet, point, graph and function to be checked out.
 - a. Owner uses this checklist as basis of their installation/inspection report for items needing correction by BAS Contractor.
 - b. Checklist submitted for approval two weeks prior to request for inspection.
 - c. Owner prepares detailed system punch list using BAS Contractor's checklist.
 - d. Punch list will show, by system, each outstanding item not complete:
 - 1) After all items appearing on punch list are completed. Make second written request to Owner for system approval.
 - e. As each or all items are approved, appropriate notation will be entered on time of joint inspection on system report with counter-signature of Owner's authorized representative and date signed.
- C. When BAS Contractor needs to modify, alter, add or remove hardware or software programs of BAS or related accessories for purpose of eliminating punch list items, do off-line operation and testing to implement them until such time acceptable performance of BAS has been established.
 1. Correct problems which occur within approved hardware or software in appropriate fashion under guarantee.
 2. Such occurrence does not void previous approval; however, BAS Contractor responsible to attend to and remedy such items within 24 hour receipt of notification of problem(s).
 3. Maintain appropriate logs, schedules and reports to reflect these items and their redress.

3.05 Systems Verification:

Contractor shall provide a complete and thorough review of the building automation system Contractor shall instruct the Owner as to the operation of the system Contractor shall provide two persons with remote communication devices to verify that equipment is responding properly to the control system The Owner will provide one person to facilitate this verification.

3.06 Training:

- A. On-Site Training: Provide 4 Hours of on site training at times designated by the Owner.
 - 1. Training shall be conducted by factory trained technicians.

3.07 Warranty:

- A. All components, parts and assemblies guaranteed against defects in material and workmanship for one (1) year in accordance with General Requirements - General Conditions and General Requirements of the Contract: completion and acceptance by Owner of total system for start of guaranty period.
- B. During first year, BAS Contractor provides all software improvements to programs that are part of system that BAS manufacturer may make commercially available at no additional cost to the Owner including any revisions to the Automation Software.
- C. BAS Contractor also guarantees all water piping modification, temperature control equipment, all conduit wiring and electrical devices he installed under BAS contract.
- D. Following procedures govern warranty period:
 - 1. Within 15 days after total BAS acceptance by Owner, BAS Contractor will initiate warranty period by transmitting to Owner commencement notification in writing.
 - 2. Within 30 days of end of warranty period, BAS Contractor notifies Owner that one (1) year warranty is almost complete.
- E. BAS Contractor's warranty covers all service, labor and parts, incidental to contrived proper performance of BAS and devices during warranty period.
- F. Normal servicing of system components not considered BAS Contractor's responsibility after one (1) year warranty period, unless contracted for by Owner.
- G. At completion of warranty, BAS Contractor furnishes list of tasks recommended, frequency of preventative maintenance and tools to perform tasks recommended.
- H. One year warranty is for all parts and labor, for specified equipment and systems called for in Division 17.

End of Section

**SYSTEM DESCRIPTION
SECTION 17100**

PART 1 - GENERAL

1.01 Description:

The Johnson Controls Building Automation System shall encompass the controls and operator interfaces described herein to perform control of the specified HVAC equipment as required by Section 17600 – Sequence of Operation.

1.02 Scope of Work:

In addition to the specified hardware, software, and field devices, the contractor shall furnish labor to engineer, program and install the building automation system. The scope of work also includes labor for testing, training and warranty Specified in Section 17600 (sequence of operations).

PART 2 -PRODUCTS OVERVIEW

2.01 HVAC Equipment General Requirements:

- A. The BAS contractor shall provide and install a dedicated microprocessor based controller with adequate points to achieve the sequence of operation plus one (1) additional spare input and one (1) output points for each existing RTU.
- B. The BAS contractor shall install and wire all manufacturer provided thermostats, sensors and all other necessary components for a complete system to operate as described in the sequence of operation.

2.02 DDC System Overview:

Provide all components and labor for a complete system of controls for all HVAC equipment safely and correctly per standards of good control engineering practice.

2.03 Minimum System Reporting Requirements:

- A. Provide a daily report including the following:
 - 1. All Critical Alarms.
- B. Provide a weekly report including the following
 - 1. All Non-Critical Alarms in the past seven days.
- C. Provide a continuous alarm acknowledgment history report with the following features:
 - 1. Grouped by Non-Critical Alarms and Critical Alarms.
 - 2. Capable of being viewed in any interval of time.
 - 3. Identify who acknowledged alarm.

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4. Identify who cleared the alarm.
 5. Allow the user to easily purge all or groups of cleared and/or acknowledged alarms.
- D. Provide a trending report including the following:
1. There shall be a report available for each piece of scheduled equipment on the plans and indicated in the sequence of operation.
 2. The report shall be easily initiated by the user for any piece of equipment. The user may set:
 - a. Duration of monitoring period.
 - b. Interval between the recording of information.
 - c. A description to be printed at the report header indicating the purpose of the report or other notations.
 3. The report shall contain the following information:
 - a. All points for the piece of equipment shown on the equipment graphic including related points or control elements and setpoints.
 - b. Additional user defined points.
 - c. Equipment tag.
 - d. User input description as described above.
 - e. Date/time of start/stop and interval between recordings.
 - f. Operator ID.

End of Section

**HARDWARE
SECTION 17200**

PART 1 - GENERAL

1.01 Section Includes:

- A. Level 1: Johnson Controls Network Automation Engine (NAE)
 - 1. Allows you to install the system on the existing IT infrastructure within a building or enterprise and use standard IT communication services over the company intranet, Wide Area Network (WAN), or public Internet with firewall protection.
 - 2. It will support one BACnet MS/TP (RS-485) trunk; includes an additional RS-232-C serial port for optional external modem; supports up to 100 devices on the BACnet MS/TP trunk.
 - 3. The NAE will need to be incorporated with existing Site Director (NAE) located at Kane County Government Building "A". This will provide single logon access to Building "A", "B", and "C".

- B. Level 2: Johnson Controls Bacnet Controllers
 - 1. A dedicated bacnet / mstp controller for each of the rooftop units. The Level 2 controller contains its own on-board I/O for complete standalone operation.
 - 2. A dedicated bacnet / mstp controller for each of the VAV boxes. The Level 2 controller contains its own on-board I/O for complete standalone operation.

PART 2 - PRODUCTS

2.01 Controllers:

- A. Level 1 Requirements:

The Network Automation Engine controller shall be Johnson Controls model # **MS-NAE4510-2.**

- B. Level 2 Requirements:
 - 1. Each dedicated Rooftop controller shall be Johnson Controls model # **MS-FEU2610-0**
 - 2. Each dedicated VAV controller shall be Johnson Controls model # **MS-VMA1620-0**

End of Section

**SYSTEM SOFTWARE AND PROGRAMMING
SECTION 17300**

PART 1 - GENERAL

1.01 General:

- A. This section describes the software capabilities for the entire system.
- B. The execution herein describes specific minimum requirements for reports and color graphics for this project. (See Section 17000 for additional requirements).
- C. Provide all functionality in the new components to achieve the sequence of operation described in Section 17600 and all logging, trending, monitoring and reporting described herein.

1.02 Workstations:

Level 1 encompasses the operating system, database and application software for use on the personal computer workstations. It is sold as a software license and is intended to be upgraded over time as new features become available.

PART 2 - PRODUCTS

2.01 Level 1 - Software Specifications:

- A. General.
 - 1. The LEVEL 1 shall contain flash ROM as the resident operating system. Application software will be RAM resident. Application software will only be limited by the amount of RAM memory. There will be no restrictions placed on the type of application programs in the system.
- B. User Programming Language:
 - 1. The application software shall be user programmable. This includes all strategies. Sequences of operation, control algorithms, parameters, and setpoints. The source program shall be English language-based and programmable by the user. The language shall be structured to allow for the easy configuration of control programs, schedules, alarms, and reports.
- C. Control Software:
 - 1. The LEVEL 1 shall have the ability to perform the following pre-tested control algorithms:
 - a. Proportional, Integral plus Derivative Control (PID)
 - b. Self Tuning PID
 - c. Two Position Control
 - d. Digital Filter
 - e. Ratio Calculator

- f. Equipment Cycling Protection
- D. Energy Management Applications:
1. LEVEL 1's shall have the ability to perform any or all of the following energy management routines:
 - a. Time of Day Scheduling
 - b. Calendar Based Scheduling
 - c. Holiday Scheduling
 - d. Temporary Schedule Overrides
 - e. Optimal Start
 - f. Optimal Stop
 - g. Night Setback Control
 - h. Enthalpy Switchover (Economizer)
 - i. Peak Demand Limiting
 - j. Temperature Compensated Duty Cycling
 - k. CFM Tracking
 - l. Heating/Cooling Interlock
 - m. Hot/Cold Deck Reset
 - n. Free Cooling

E. History Logging:

1. Each controller shall be capable of logging any system variable over user defined time intervals ranging from 1 second to 1440 minutes. Any system variables (inputs, outputs, math calculations, flags, etc.) can be logged in history. A maximum of 32767 values can be stored in each log. Each log can record either the instantaneous, average, minimum or maximum value of the point. Logs can be automatic or manual. Logged data shall be downloadable to the Operator Workstation for long term archiving based upon user-defined time intervals, or manual command.

2.02 Level 2 Based Controller:

- A. Programming of controllers shall be capable of being done either off-line or on-line from any operator workstation. All information will be available in graphic or text displays. Graphic displays will feature animation effects to enhance the presentation of the data, to alert operators of problems, and to facilitate location of information throughout the DDC system. All operator functions shall be selectable through a mouse.
- B. Perform all functions as described in this specification and achieve the sequence of operation.

PART 3 - EXECUTION

3.01 Software Installation:

- A. The Contractor shall provide all labor necessary to install, initialize, start-up and debug all system software as described in this section. This includes any operating system software or other third party software necessary for successful operation of the system.

3.02 Database Configuration:

- A. The Contractor will provide all labor to configure those portions of the database that are required by the sequence of operation (Section 17600).

3.03 Color Graphic Slides:

- A. The Contractor will provide color graphic displays of all major mechanical equipment and systems in the building. The displays shall contain all associated points identified in the point list and allow for setpoint changes and over rides as required by the owner for the following minimum requirements:
 - 1. Rooftop units
 - 2. VAV boxes
- B. Provide a color graphic displays of each floor of the building and roof with all DDC controlled and monitored HV AC components indicated on the plans. Operator can click on the major components on plans to view systems listed above.
- C. See Section 17000 for additional requirements.

End of Section

**FIELD DEVICES
SECTION 17400**

PART 1 - GENERAL

1.01 Description:

- A. Included with field devices are all sensors, transmitters, transducers, wells, relays, switches and power supplies necessary for the operation of the Level 1 and Level 2 controllers.
- B. All field devices shall include the associated wiring, conduit, mounting, and enclosures.
- C. Also included are control valves, valve actuators, damper actuators, and conventional controls necessary for a completely functioning system in accordance with the sequence of operation (Section 17600).
- D. All end devices and sensors are field installed.

1.02 Quality Assurance:

- A. The contractor shall provide all field devices per the performance requirements set forth in this section. All devices selected by the Contractor must be contained in the Submittal documents and are subject to approval by the Engineer.
- B. All sensors and signal conditioning equipment will be of the type which are universally accepted in the industry, can easily be second sourced and are compatible with all of the manufacturer's equipment.
- C. Material furnished under Division 17 shall be standard cataloged products of recognized manufacturers regularly engaged in the production of such material and shall be the latest design.

PART 2 - PRODUCTS

2.01 Input Devices:

- A. Description:
 - 1. Input devices shall include sensors for measuring temperature, humidity, flow, pressure, current, KW, and equipment status. Actual sensors for this project are determined by the point list.
- B. Accuracy:
 - 1. System accuracy of sensed conditions shall be as follows:
 - a. +/- 3 F for space temperature in the -50° - 250° F range
 - b. +/- 3 for duct temperatures in the -50° to 250° F range
 - c. +/- 3 F for outside air temperatures in the -50° to 250° F range

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- d. +/- 3 F for water temperatures in the -50° to 250° range
- e. +/- 1% for KWH and KW monitoring
- f. +/- 3% for relative humidity in the 10 to 90% range
- g. +/- .1 inches for static pressure over 0-5 inch water gauge
- h. +/- .1 inch for filter status differential over a 0-2 inch range
- i. +/- 1 % for pressure switches
- J. +/-1% for airflow
- k. +/- 3% for water flow
- l. +/- 1 % for differential water pressure

- 2. The system shall maintain the specified analog end-to-end accuracy throughout the warranty period from sensor to controller readout.

C. Packaging:

- 1. Sensors (transducers) will be appropriately packaged for the location.
 - a. Architectural housing for space mounting
 - b. Weatherproof/sunshield housing for outdoors
 - c. Thermal well housing for water applications
 - d. Protective housing for duct mounting

D. Environmental Ratings:

- 1. The sensor/transducer shall be selected to withstand ambient conditions where:
 - a. Moisture or condensation is a factor
 - b. Vibration exists from duct work, equipment, etc.
 - c. Reasonably expected transient conditions exist for temperatures, pressures, humidities, etc. outside the normal sensing range.

E. Temperature Sensor:

- 1. Thermistor (10K ohm at 33 Deg F.) or RTD (1K ohm at 70 deg F).
- 2. Setpoint: Setpoint 55 to 85 degrees F, Single or Dual Adjustment. Graduated Scale (Wall Mount Only)

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3. Mounting: Wall, Duct, Well Averaging, Outdoor Air, Bearing.
4. Range: -50 to 250 degrees F.
5. Accuracy: +/- .65 degrees F at 70 degrees F, for DIN 43760 Class A Accuracy.
6. Output: 1000 ohms.
7. Room temperature sensors will be available in a minimum of three configurations:
 - a. Type A: Sensing element only.
 - b. Type B: Sensing element and setpoint adjustment, only.
 - c. Type C: Sensing element and setpoint adjustment. time override button.
8. Provide Type C thermostat unless otherwise indicated.

F. Humidity Sensors:

1. Materials: Polymer.
2. Rating: Class 2.
3. Mounting: Duct or Wall.
4. Range: 10% to 90%.
5. Accuracy: +/- 3%.
6. Protection: 0-100% non-condensing.
7. Output: 0-10VDC. 4-20mA.
8. Special: Duct or Wall Mounting Kit.

G. Humidity Transmitter w/Temperature Sensor - Wall & Duct Mount

1. Materials: All-Polymer element, and Plastic Enclosure.
2. Rating: 95-5 V Flammability Rated, UL, Class 2.
3. Mounting: Wall, Duct
4. Range: 10% to 90%
5. Accuracy: +/-2%
6. Polymer Req.: 14 to 30 VDC or 20 to 30 V AC at 50/60 Hz, Class 2

7. Output:
 - a. 0-10 VDC or 0-5 VDC User Selectable or 4 to 20 mA
 - b. Nickel 1000 ohms at 70 degrees F.
 - c. Silicon 1035 ohm at 77 degrees F.
 - d. Platinum is 1000 ohms at 32 degrees F.
 8. Special: Provide NIST Certificate.
- H. Air High Differential Pressure Switch
1. Rating: NEMA 1.
 2. Mounting: Duct Insertion.
 3. Range: 1" to 10" WC, complete with field adjustable setpoint.
 4. Protection: Overpressure to 1 PSIG.
 5. Output: 2 Form C Contacts, minimum 1 360VA
 6. Special: Manual reset, provide complete installation kit including static pressure tips, tubing, fittings and air filters.
- I. Differential Pressure Transducer:
1. Rating: NEMA 1.
 2. Mounting: Duct Insertion. Pipe Insertion.
 3. Range: 0-25 in. water column unidirectional, 0- +/- 5 in. water column bi-directional.
 4. Accuracy: +/- 1 % full scale.
 5. Protection: 10 PSfG
 6. Output: 4-20 mA or 0-5 VDC or 0-10 VDC
- J. Static Pressure Transducer:
1. Rating: NEMA 1.
 2. Mounting: Duct Insertion, Pipe Insertion.
 3. Range: 0-25 in. water column unidirectional, 0- +/- 5 in. water column bi-directional.
 4. Accuracy: +/-1% full scale.
 5. Protection: 10 PSIG

6. Output: 4-20 mA or 0-5 VDC. O-() VDC

K. Water Differential Pressure Switch

1. Materials: Brass bellows.
2. Mounting: Pipe mounted
3. Range: 2-26 PSI. 1.2 PSI fixed differential
4. Protection: 120 PSI Differential overpressure, 180 PSI static pressure
5. Output: Form C contacts, 50 VA.
6. Special: Pipe taps and shut off valves provided by Div. 15.

2.03 ELECTRIC DAMPER OPERATORS

A. Acceptable Manufacturers:

1. Belimo.
2. Johnson Controls.

- B. All damper operators shall be electronic. Operators shall be positive positioning, spring return. Motors shall be low voltage synchronous type and shall be non-overloading at a continuous stall. Damper operators shall have metal bodies.
- C. The BAS contractor shall size select operators to have ample power to overcome friction of damper linkage and air pressure acting on the damper blades.
- D. The damper operator mounting arrangement shall be outside the air stream wherever possible.
- E. The operators shall have external adjustable stops to limit the stroke. The operator linkage arrangement shall be such as to permit normally open or normally closed positions of the damper as indicated. Adjustable in the field.
- F. Actuators to be factory selected, mounted and tested for proper operation based on unit size, type and torque requirements.
- G. Actuators shall be applied according to the manufacturer's specifications.
- H. Actuators shall be capable of being mechanically and electrically paralleled to increase torque where required.
- I. Actuators shall be direct coupled (over the shaft) enabling them to be mounted directly to the damper shaft without the need for connecting linkage. The clamp holding the damper shaft shall use a V-bolt and toothed V-clamp causing a cold weld effect for positive gripping. Single bolt or set screw type fasteners are not acceptable.
- J. For power failure and safety applications a mechanical spring return mechanism shall be used.

- K. Control signal shall be 2-10 Vdc or 4-20 mA and a clamp position 2-10 Vdc automation feedback signal shall be available. The feedback signal shall be independent of the input signal and may be used to parallel other actuators or for true actuator position indication.
- L. Over Current Protection: Actuators shall provide protection against actuator burnout using an internal current limiting circuit or digital motor rotation sensing circuit. Circuit shall insure that actuators cannot burn out due to stalled damper or mechanical and electrical paralleling.
- N. Torque Requirements Actuators shall be required to comply with the manufacturer's minimum torque standards. All actuators shall be sized according to the damper manufacturer's recommendations.

2.04 Automatic Control Valves:

- A. Acceptable Manufacturers:
 - 1. Belimo.
 - 2. Johnson Controls.
- B. Electronic, positive positioning, spring return, low voltage (24 VAC) actuators to be properly selected for the valve body size.
- C. Valve bodies to be 3-way mixing, 2-way normally open or normally closed to suit application. Bodies 2 inches and less to be 250 psig bronze, screwed connection, bronze seats, equal percentage plugs, stainless steel stems with teflon packing. Over 2 inch bodies to be 125 psig iron, flanged connection with modified equal percent plug. Valve selection to be based on 3 psig drop across fully open valve.
- D. The valves shall be sized by the control manufacturer and be provided with actuators of sufficient power for the duty intended. Valve body and actuator selection shall be sufficient to handle system pressure and shall close against the differential pressures to be encountered on the project.
- E. Where required by the sequence of operation, valves shall be capable of being sequenced either with other valves or other actuated devices. Where such sequencing is required, the actual spring range when adjusted for spring shift, shall be such that no overlapping occurs. In the event that spring shift causes an overlap, a pilot positioning operator shall be furnished.
- F. Small Valves – 1/2 Inch Through 2 Inch:
 - 1. Ball or eccentric plug type.
 - 2. Valves shall be constructed with a two piece cast brass body and screwed ends. Valves shall have removable packing gland with threaded cap for shaft seal. O-Ring type seals are unacceptable.
 - 3. Electric actuator shall be Belimo or equal. Body rating shall be 400 psi at 50 degrees F. Body rating shall also meet or exceed ANSI B6.5 Class 250.

G. Valves - 2-1/2 Inches and Above:

1. Ballor butterfly type.
2. Valves shall be constructed with a cast iron body and have flanged connection Valves shall have removable packing gland with threaded cap for shaft seal.
3. Electric actuators shall be Belimo or equal.
4. Ball and butterfly valves need to achieve proper Cv. by use of reduced size and reducers or reduced port.

H. All control valves shall fail safe by spring return as follows:

1. Heating: Fails open (N.O.).
2. Cooling: Fails closed (N.C.)
3. Gas Shut-off Valve: Fails closed (N.C.)

2.05 Control Valve Assemblies:

All ball valves used for modulating or floating control shall be furnished with a stainless steel ball & stem and Reinforced TFE seats and seals and female NP threads. Two way bronze bodies up to 3 inches shall be rated for 600 PSI WOG, cold, non-shock service. Three way bronze bodies up to 2 inches shall be rated for 400 PSI WOG, cold, non-shock service. The valves shall have a blowout proof stem design. Each valve shall be tested by the valve manufacturer, air under water, at each end of travel. The stem packing gland shall be adjustable, to compensate for wear. Over-ride handles when provided shall have a hole for tagging purposes.

2.06 Valve / Actuator Mounting:

All ball valve bodies shall be thermally separated from the actuator mounting bracket with high temperature materials rated for continual use at greater than 350 Deg. F. Additional thermal separators shall also be provided between the mounting bracket and electronic valve actuators to allow complete free air movement around the actuator, to minimize heat transfer and condensation. Valve assemblies without both sets of stand-offs described above are not acceptable.

2.07 Valve Actuator:

- A. The valve actuator shall be capable of providing the minimum torque required for proper valve close-off for the required application. Each actuator shall have current limiting circuitry incorporated in its' design to prevent damage to the actuator. A gear release shall be provided on the motor to allow for manual override, except where spring return actuators are applied. Applications iliat require fail safe operation of the valve assembly shall use actuators with mechanical spring return or the addition of a centralized battery back-up module at the control panel for ease of maintenance. Capacitor type back-up or individual battery back-up within the motor housing is not acceptable.

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- B. The actuator shall be modulating, floating (Tri-State), or two position with spring return as called out in the control sequence of operation. All modulating valves shall have positive positioning. And respond to a 2-10 VDC, 4-20 ma ,,,th a dropping resistor. or 0-135 ohm type control signal. These modulating units will each have a position feedback signal corresponding to the actual valve position which can be wired back to the control system .An optional feedback potentiometer, or aux. switch shall be available if required for floating or two position type actuators. All control valves shall have a visual position indicator and an attached 3 foot cable for easy installation to a junction box .. The actuator shall be powered by a 24VAC or 24VDC signal and the power consumption shall not exceed 8 watts at 24 V AC. Actuators shall be UL listed.

2.08 Freezestats:

Freezestats shall have 20 foot element and adjustable setpoint. Sensor shall open the circuit when any one foot section of its element senses temperatures at or below its setpoint over any 2 foot section.

2.09 Smoke Detectors:

Dual chamber ionization type products of combustion duct detectors shall be provided where required by NFPA Standard 90A and shall meet local code requirements for HVAC systems. These detectors shall be furnished by the Division 16 Contractor and installed by Division 15 contractor. BAS Contractor shall wire spare contact on smoke detection to BAS system to shut down fan.

2.10 Motor Status Monitoring:

Motors shall be monitored for status via a current sensing relay or differential pressure across pump or fan.

2.11 Humidity Sensors

- A. Humidity sensors shall be available in accuracies ranging from 1% to 3%.
- B. Packaging options shall include those for wall, duct and outside air mounting.
- C. All sensors shall be field calibratable with a portable service tool.

2.12 Digital Sensors

- A. All digital inputs will be provided by *dry* contacts. The contacts will be wired normally open or normally closed as required.
- B. Motor status (pumps, fans, etc.) by current sensing switch shall use Neilsen-Kuljian current -operated switch.
- C. Pump flow status by differential water pressure shall use Penn P74 or equivalent.
- D. Fan status by differential pressure shall be Dwyer or equivalent.