

TAB 2 – Products/Pricing

Products/Services/Pricing

Johnson Controls offers Discount Off Catalog pricing. Due to the custom nature of our product offerings, we use a software application to generate our costs in lieu of price lists. Customers will receive an itemized catalog price list for their particular project. In this way, our prices and discounts are completely transparent to the customer. This pricing method ensures that OMNIA Partners Participating Agencies receive the latest pricing. We structure the pricing for all cooperative contracts the same way to ensure consistency in our contracts.

For estimating, our teams mainly use Nx Gen for Service work and the Projects Development Tool for larger scale projects. These are the tools we have used for some time and have used previously with cooperative customers. Johnson Controls is willing to engage OMNIA Partners in an approval process for these tools if necessary. The following details apply to the products listed in our pricing list.

Standard Warranty

The following sample text shows our standard warranty for HVAC systems and service. Extended or customized warranty terms are negotiable.

Parts Warranty: JCI warrants that original equipment, parts or components manufactured or labeled by JCI shall be free from defects in material and workmanship under normal usage and proper installation and maintenance for a period of one (1) year from the date of shipment. Equipment, parts or components not manufactured or labeled by JCI shall carry a warranty from defects in material and workmanship under normal usage and proper installation and maintenance for a period of ninety (90) days from the date of shipment. Notwithstanding the foregoing, in the event JCI is reasonably able to identify a warranty for a period longer than the ninety (90) days applicable to equipment, parts or components not manufactured or labeled by JCI, it will assign all assignable rights under such warranty to Customer and reasonably cooperate in the enforcement of any warranty claim. Recertified or replacement parts installed on equipment and still under the original equipment manufacturer's warranty are covered for ninety (90) days or the remainder of the original equipment manufacturer warranty period, whichever is longer. For large tonnage chillers, JCI will warrant under normal usage and proper installation and maintenance for a period of one (1) year from the date of shipment: screw compressors, motors, control panels and components, VFD's and components and Liquid Cooled Solid State Starters and components. For small tonnage chillers, JCI will warrant under normal usage and proper installation and maintenance for a period of one (1) year from the date of shipment: scroll compressors, condenser coils, control panels and components, screw compressors (DXS and Mustang), and fan motors. In the event of a valid warranty claim, the Customer's remedy shall, at JCI's sole discretion and subject to the exclusions herein, be limited to repair or replacement of the subject equipment, part or component conditioned upon the return to JCI of any defective equipment, part or component. This Parts Warranty does not cover any shipping, handling or transportation charges or any associated labor costs.

Labor Warranty: JCI warrants its workmanship or that of its agents in relation to installation of materials for a period of ninety (90) days from date of installation or with respect to service work for a period of ninety (90) days from the date of service. Customer acknowledges that re-performance shall be its exclusive and only remedy with regards to any services provided by JCI. Customer shall bear all labor

costs associated with the repair or replacement of failed material that is outside the scope of this express labor warranty. All warranty labor shall be executed during JCI normal business hours.

These warranties do not extend to any equipment which has been repaired by others, abused, altered, or misused in any way, or which has not been properly and reasonably maintained.

THESE WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THOSE OF MERCHANTABILITY AND FITNESS FOR A SPECIFIC PURPOSE. UNDER NO CIRCUMSTANCES SHALL JCI BE LIABLE FOR ANY SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES ARISING FROM OR RELATING TO ANY DEFECT IN MATERIAL OR WORKMANSHIP OF EQUIPMENT OR THE PERFORMANCE OF SERVICES.

Additional warranty information:

Question	Information
Do your warranties cover all products, parts, and labor?	There is a parts warranty and a typically a manufacturer warranty that is passed on to the customer. Additionally, there is a labor warranty provided by Johnson Controls
Do your warranties impose usage restrictions or other limitations that adversely affect coverage?	The warranties do not extend to any equipment which has been repaired by others, abused, altered, or misused in any way, or which has not been properly and reasonably maintained.
Do your warranties cover the expense of technicians' travel time and mileage to perform warranty repairs?	Yes.
Are there any geographic regions of the United States for which you cannot provide a certified technician to perform warranty repairs? How will NJPA Members in these regions be provided service for warranty repair?	We can provide warranty repairs in all geographic regions.
Will you cover warranty service for items made by other manufacturers that are part of your proposal, or are these warranties issues typically passed on to the original equipment manufacturer?	We pass all manufacturer warranties on to the customer. If requested and negotiated into the contract, we can cover a manufacturer warranty or enable the customer to buy an extended warranty.
What are your proposed exchange and return programs and policies?	If we are in the installation phase and the requested change is similar in price and operation to the planned equipment, we will make the change as requested. If the change is less expensive, we will refund the difference to the customer. If the change is more expensive, we implement the change with a formal Change Order.

Optional Warranty

Extended warranties are available for most of our products.

Estimated Lead/Delivery Time

Delivery times vary greatly based on the type of equipment and the customer's location. We strive to achieve just in time delivery to avoid storage costs and costs associated with damage that can occur when equipment and parts are stored on site or in a facility for any length of time. Additionally, we do not enforce your warranty until we reach substantial completion. This helps save our customers a little money by not starting the warranty period too early, when the system is not yet in use.

Products

HVAC Refrigeration

Type: Scroll, Rotary, Centrifugal, Reciprocating, Air-Cooled Chillers, Water-Cooled Chillers, Condensing Units, and Absorption Chillers

Johnson Controls/YORK takes pride in manufacturing the most state-of-the-art equipment for your refrigeration needs. YORK's water-cooled chillers, both centrifugal and screw machines, perform at the highest part load energy efficiencies in the market. Coupled with our air-cooled chillers, we give you the benefit of air-cooled design, plus energy efficiency and quiet operation.

Cooling Medium: Water, Brine, Air

Brand Names: Johnson Controls / YORK

Capacity Range:

- 150-500 tons – Air-Cooled Chillers
- 150-6,00 tons –Water-Cooled Chillers

Standard Warranty: 18-month parts and labor from date of shipment

Optional Warranty:

- Local parts and labor warranties are available from 1-10 years. Please consult with your local Johnson Controls representative for more information

Estimated Lead/Delivery Time:

- Lead times range anywhere from in stock to 52 weeks based on construction and performance requirements
- Quick ship options are available on select chillers
- Lead times will increase as chillers become more custom

Location of Manufacturing:

- Chillers are manufactured in USA and Mexico for North America source

Range of Efficiency

- Efficiency varies by product, application, condition, capacity, etc. Please contact a Johnson Controls representative for performance of a specific project.

Estimated Market Share

- Johnson Controls does not divulge market share for equipment categories.

Provide example data on each type of product provided

- Data provided upon request

Detailed Features & Benefits:

<https://www.johnsoncontrols.com/hvac-equipment#Chillers>

Indoor Air Quality Products and Devices

Type: Active polarization, non-ionizing, electronic air cleaning systems intended to replace passive filtration

Johnson Controls offers a variety of solutions that address the challenge of unhealthy and contaminated air. These solutions include ionization equipment, recirculation systems, high volume systems, gas filtration media, and electronic air cleaning.

Brand Names:

- Bioclimatics

Capacity Range:

- Available for air units from 0 – 200,000+ CFM

Standard Warranty:

- 15 month parts from date of shipment

Optional Warranty:

- N/A

Estimated Lead/Delivery Time

- Varies

Estimated Market Share

- Johnson Controls does not divulge market share for equipment categories.

Provide example data on each type of product provided

- Data provided upon request

Detailed Features & Benefits:

<https://www.johnsoncontrols.com/hvac-equipment>

Unitary

Johnson Controls offers multiple DX (direct expansion) air-conditioner options from 0.5 to 150 tons. We offer many different styles and shapes to accommodate many different commercial applications. Products are available for both air-source and water-source applications.

Type: Rooftop units, Split systems, Heat pumps, PTACs, Water source heat pumps, mini-splits

Brand Names:

- Johnson Controls, YORK, Skymark, Tempmaster, Luxaire, Coleman, Champion, Fraser-Johnson

Capacity Range:

- Outdoor Package Units = 3-150 tons
- Indoor Package Units = 2-105 tons
- Split Systems = 7.5-50 tons
- Water Source Heat Pumps = 0.5-50 tons

- PTACs = .75-3 tons

Heating Medium (Electric, Gas, Steam, Hot Water, DX)

- Outdoor Package Units – electric, gas, steam, hot water
- Indoor Packaged Units – electric, steam, hot water
- Split Systems – electric, hot water, steam coil
- Water Source Heat Pumps – DX

Cooling Medium (DX, Chilled Water)

- Outdoor Package Units – DX
- Indoor Packaged Units - DX
- Split Systems – DX
- Water Source Heat Pumps – DX

Standard Warranty:

- Standard warranty will vary depending on model and size. Please consult individual product literature for more information.

Optional Warranty:

- Varies depending on the product and the need, ranging from compressor only to parts only to labor only to combinations with multi-year duration

Estimated Lead/Delivery Time:

- Lead times will vary from 4-8 weeks depending on product line. Please consult individual product literature for more information.

Range of Efficiencies:

- Outdoor Package Units – up to 16.7 seer
- Indoor Package Units – 10-15.3 EER
- Split Systems – up to 11.7 EER
- Water Source Heat Pumps – exceeds ASHRAE 90.1 efficiencies
- PTACs – up to 10.6 EER

Location of Manufacturing

- Norman, Oklahoma; Ajax, Ontario; Fort Wayne, Indiana; Monterrey, Mexico

Estimated Market Share

- Johnson Controls does not divulge market share for equipment categories.

Provide example data on each type of product provided

- Data provided upon request

Detailed Features & Benefits:

- <https://www.johnsoncontrols.com/hvac-equipment>

Air Handling

Type: Standard Air Handling Units (AHUs), Customer AHUs, AMI Modular AHUs.

YORK Solution AHUs by Johnson Controls – the only names you need to know for an AHU line that has no limits, ranging from basic indoor units up to penthouse mechanical-equipment rooms. And whatever

the air-handling challenge-IAQ, acoustics, energy, controls, you name it-Johnson Controls has the experience to build a Solution AHU that will meet your needs.

Brand Names:

- Johnson Controls / YORK Solution

Fan Types

- Centrifugal with FC (forward-curved), AF (airfoil) or BI (backward-included) blades
- Belt-driven or direct-drive
- DWDI (housed) or SWSI (plenum)
- AC induction or EC motor
- Manufacturers used include Twin City Fan, Lau, Comefri, ebm-papst

Capacity Range:

- 2000 CFM – 200,000+ CFM

Heating Medium (Electric, Gas, Steam, Hot Water)

- Hot Water
- Electric Heat
- Steam
- Gas

Cooling Medium (DX, Chilled Water)

- Chilled Water
- DX
- Coils manufactured by Johnson Controls

Standard Warranty:

- 18-month parts and labor from date of shipment

Optional Warranty:

- Warranties available on all components
- Local parts and labor warranties are available from 6 to 10 years. Please consult with your local Johnson Controls representative for more information

Estimated Lead/Delivery Time:

- Lead times range anywhere from 3-20 weeks based on construction and performance requirements.
- Quick ship options are available from 10 working days to 20 working days
- Lead times will increase as units become more custom

Location of Manufacturing

- York, PA
- Albany, MO
- Hattiesburg, MS

Estimated Market Share

- Johnson Controls does not divulge market share for equipment categories.

Provide example data on each type of product provided

- Data provided upon request

Detailed Features & Benefits:

- <https://www.johnsoncontrols.com/hvac-equipment/air-handling-units>

Air Terminal Devices and Heating Products

Type:

Johnson Controls offers a wide variety of Air Terminal Devices. Fan coil options are available in horizontal, vertical, low-profile horizontal, floor mount vertical, high-rise vertical, reduced footprint vertical, and concealed cabinet. High Performance models also meet the customer’s specifications for more demanding conditions. Johnson Controls VAV terminal units are offered in standard configurations as well as low-height, fan powered, and dual-duct configurations.

Brand Names:

- Johnson Controls, Titus, Krueger, Enviro-tec, Superior Rex

Capacity Range:

- Fan Coil Terminal Devices: 200 to 2,000 CFM
- Blower Coil Units: 800 to 4,000 CFM
- VAV Terminal Devices: 75 to 8,000 CFM

Heating Medium:

- Electric Heat
- Hot Water
- Steam
- Aux Heat

Cooling Medium:

- Chilled Water
- DX

Standard Warranty:

- 12 Months from Startup
- Not to exceed 18 Months
- No Labor

Optional Warranty:

- 3% of list price per additional year of warranty

Estimated Lead/Delivery Time:

- 4-5 Weeks

Estimated Market Share

- Johnson Controls does not divulge market share for equipment categories.

Provide example data on each type of product provided

- Data provided upon request

Detailed Features & Benefits:

- <https://www.johnsoncontrols.com/hvac-equipment/air-distribution/terminal-units>

DDC Controls

Type:

- Systems Integration, Light Commercial, Building Automation Systems, Building Controls System, Metasys, Facility Explorer, BCPro, Verasys, core components, end devices, lighting, panels

System Protocol Capabilities:

- BACnet
- LonWorks
- Proprietary
- Any Combination

LAN Communication Structure Options:

- Peer to Peer
- Polling

Human Machine Interface Options:

- Personal Computer
- Notebook
- Handheld

Third Party Interface Drivers:

- Available through System Integration Services

Remote Alarm Capabilities:

- Local & Remote Available with Metasys®

Standard Warranty:

- Parts: 3 Years
- Labor: 12 Months

Optional Warranty:

- Labor 2-5 Years or Per Customer Request

Estimated Lead/Delivery Time:

- Depends on selected equipment

Location of Manufacturing City

- Reynosa, MX

Estimated Market Share

- Johnson Controls does not divulge market share for equipment categories.

Provide example data on each type of product provided

- Data provided upon request

Detail Features & Benefits:

- <https://www.johnsoncontrols.com/building-automation-and-controls/building-automation-systems>

Cooling Towers

Type:

- All types

Brand Names:

- All brands

Capacity Range:

- 6 – 1300 Ton +

Standard Warranty:

- 5-year parts only

Optional Warranty:

- N/A

Estimated Lead/Delivery Time:

- 4 – 5 weeks after receipt

Location of Manufacturing

- varies

Estimated Market Share

- Johnson Controls does not divulge market share for equipment categories.

Provide example data on each type of product provided

- Data provided upon request

Detailed Features & Benefits:

- <https://www.johnsoncontrols.com/insights/2017/buildings/features/a-cooling-towers-best-friend>

Pumps

Type:

- All types

Brand names:

- Bell & Gossett, Armstrong, and others

Capacity Range:

- 10 GPM to 4000 GPM

Standard Warranty:

- One year from date of start-up

Optional Warranty:

- Extended warranties available

Estimated Lead/Delivery Time:

- varies

Location of Manufacturing

- varies

Estimated Market Share

- Johnson Controls does not divulge market share for equipment categories.

Provide example data on each type of product provided

- Data provided upon request

Detailed Features & Benefits:

- <https://www.johnsoncontrols.com/hvac-equipment>

Invertors

Brand Names:

- Johnson Controls and others

Capacity Range:

- ¼ HP to 250 HP+

Standard Warranty:

- Typical 2-year Warranty

Optional Warranty:

- 3-year Warranty with Certified Startup

Estimated Lead/Delivery Time:

- varies

Location of Manufacturing

- varies

Estimated Market Share

- Johnson Controls does not divulge market share for equipment categories.

Provide example data on each type of product provided

- Data provided upon request

Detailed Features & Benefits:

- <https://www.johnsoncontrols.com/hvac-equipment>

Boilers and Water Heaters

Type:

- Raypak, Sellers, Johnston

Brand Names:

- Raypak, Sellers, Johnston

Heating Medium (Electric, Gas, Steam, Hot Water):

- Hot Water
- Electric Heat

- Steam
- Gas

Capacity Range:

- 66,000btu to 4,000,000
- 10 to 800 Boiler Horsepower

Standard Warranty:

- 1 year from start-up

Optional Warranty:

- Extended warranties available on all components

Estimated Lead/Delivery Time:

- Lead times vary from 0 to 20 weeks

Detailed Features & Benefits:

- N/A

HVAC Specialty Products

Air-Cooled Variable Refrigerant Flow Systems

YORK VRF systems achieve extremely high efficiencies by modulating the flow of refrigerant according to the exact demands of individual areas, using innovative inverter-driven scroll compressor technology. The result? Integrated energy efficiency ratio (IEER) as high as 25.2, plus an average of up to 39% energy savings for some applications, compared to conventional HVAC systems. YORK VRF indoor units operate quietly and are easy to install, service and maintain. A wide variety of non-ducted and ducted units are available in styles and capacities to fit multiple applications. Units operate quietly with sound ratings as low as 24.5 dBA.

Type:

- Outdoor Units: Both heat recovery and heat pump types, air cooled condensing units with inverter scroll compressors; up to 29.5 SCHE and 25.2 IEER
- Indoor Units: Fan coil units in multiple styles (concealed, wall mount, ceiling cassette); ducted and non-ducted; sensor options

Brand Names:

- Johnson Controls; YORK®

Cooling Medium:

- DX

Heating Medium:

- DX

Capacity Range:

- 6-36 tons Outdoor Air-source Units
- 6-48 tons Water-source Units
- .5-4 tons Indoor Units

Standard Warranty:

- 10-year standard warranty

Optional Warranty:

- Contact account representative for extended warranty details and limitations.

Estimated Lead/Delivery Time:

- 4-5 Weeks

Location of Manufacturing City:

- Japan and China

Range of Efficiencies:

- up to 29.5 SCHE and 25.2 IEER

Estimated Market Share:

- Johnson Controls does not divulge market share for equipment categories.

Provided example data on each type of product provided:

- Data provided upon request

Detailed Features & Benefits:

- <https://www.johnsoncontrols.com/hvac-equipment/variable-refrigerant-flow-systems>

Duct Free Mini Split Systems

Effective climate control is about comfort and efficiency – delivering just the right amount of heating and cooling to every space while using no more energy than necessary. YORK® single and multi-zone duct-free mini-split systems enable you to provide innovative solutions to residential and light commercial applications. YORK® duct-free mini-split systems solve difficult heating and cooling challenges on job sites where the adjustment of existing systems will not satisfy the need.

Type of Equipment/Components:

- Z Series 28 SEER Single Zone Mini Split Heat Pump System
- X Series 23 SEER Single Zone Mini Split Heat Pump System
- R Series 20 SEER Single Zone Mini Split Heat Pump System
- P Series 18 SEER Single Zone Mini Split Heat Pump System
- W Series 22 SEER Multi Zone Mini Split Heat Pump System
- M Series 16 SEER Multi Zone Mini Split Heat Pump System
- Controls
- EWPE Smart App

Capacity:

- Single Zone .75-4 tons
- Multi-zone 1.5-3.5 tons

Brand Names:

- Johnson Controls; YORK®

Standard Warranty:

- 7 years compressor; 5 years parts

Optional Warranty:

- Available upon request

Estimated Lead/Delivery Time:

- 4-5 Weeks

Location of Manufacturing City:

- China

Range of Efficiencies:

- 16-28 SEER

Estimated Market Share:

- Johnson Controls does not divulge market share for equipment categories.

Provided example data on each type of product provided:

- Available upon request

Detailed Features & Benefits:

- <http://www.johnsoncontrols.com/buildings/hvac-equipment/mini-split-systems>

LED Lighting Products

LED Area Lights

- Yes

Flexible LED Strips

- Yes

Ceiling Lighting

- Yes

Bulbs, Fixture Products

- Yes

Others

- Products in all categories. Intelligent lighting, connected lighting, streetlighting, intelligent street lighting, decorative lighting, human-centric lighting, specialty lighting, safety lighting, disinfectant lighting, and commercial lighting.
- Interior Lighting:
 - Linear Fluorescent Upgrades: New LED fixtures, LED retrofit kits, LED tubes
 - CFL/INC/HID Upgrades: New LED fixtures, LED retrofit kits, LED re-lamps
 - High Bay Fixtures: New LED fixtures
- Exterior Lighting:
 - Building Mounted: Wall packs, floods, canopy
 - Pole Mounted: Area and street lights, Post top decorative, High mast, Parking garages
- Lighting Controls:
 - Room based controls: occupancy sensors, Photocell sensors
 - Stand-alone Networked controls
 - Integrated Networked controls with BAS
 - Smart City controls

Fire Alarm Systems

Types: (Local, Auxiliary, Remote, or Proprietary)

- All types are available

Brand Names:

- Johnson Controls IFC (OEM Notifier), SimplexGrinnell, Tyco

Standard Warranty: Parts and Labor:

- 12-month labor; 3 year parts

System Architecture: (Stand-alone, single node or multi-node networks)

- All are available

Network Type:

- Peer to Peer and Dgrade mode

Audio System:

- Emergency Voice

Node Configuration:

- Class A and Class B

Smoke Evacuation:

- UUKL and UOJZ

Remote Annunciation Types:

- JNCA (Global Annunciator), IFW (Work Station), LCD160, LCD80, or LDM

Third Party Interface:

- Noti-Fire-Net, Metasys BACnet

Remote Communications:

- DPI-232, EIA-232 Ports, EIA-485 Ports

Detailed Features & Benefits:

- <https://www.johnsoncontrols.com/fire-detection>

Equipment Parts and Supplies

Type:

- All types required to support the products we install

Brand Names:

- All brands

Location of stocking parts:

- Each branch location is stocked with parts. Some parts may require shipping from the manufacturer.

Standard Warranty:

- Warranty terms differ for each part. Johnson Controls typically offers a full one-year or three-year warranty, depending upon the type of component.

Optional Warranty:

- Extended warranties are available.

Estimated Lead/Delivery Time:

- Lead-time depends on the part.

Percentage of locally stocked parts to delivered parts:

- Varies by location

Detailed Features & Benefits:

- <https://www.johnsoncontrols.com/services-and-support/operations-maintenance-and-repair-services>

Services

Startup and Commissioning Services

Define process for validation of system or equipment operation to design:

Johnson Controls specializes in providing continuous commissioning programs focusing on the specific requirements of the customer. We believe that a Continuous Commissioning Plan is a critical part of establishing a long-term Energy Management program. Due to our extensive experience in Building Management and Controls Automation, we offer unparalleled value in the design and implementation of continuous commissioning programs. However, we allow the customer to choose whether to outsource this ongoing service to Johnson Controls or perform it in-house. We pride ourselves on educating customers during all of our commissioning activities – whether initial or ongoing – so that they may assume the commissioning role in the future if they desire.

Each retrofit will be validated by a qualified technical representative and be in accordance with the sequence of operations and contract requirements. As further assurance, our Operations Manager will certify each retrofit in accordance with the approved Johnson Controls Project Commissioning Plan.

The purpose of a Commissioning Plan is to provide a clear scope and format of the commissioning process for all project team members to reference and follow. The Commissioning Plan for this project will guide the installation contractor and commissioning team through an effective process. The Plan aids the project design, construction, and operations teams to ensure the quality of the project. The team may modify and adapt the plan to meet unforeseen quality control issues and opportunities throughout the project.

The plan includes the following items:

- Performance Testing Procedures
- Equipment Operating Parameters
- General Commissioning Schedule
- Warranty Walk-Through and Other Requirements
- Project Requirements and Design Intent
- Testing Certification Requirements
- Roles and Responsibilities

Type:

- All York Equipment, Metasys® Controls, Air/Water Balance

List Key Personnel:

- York and Metasys® Startup is performed by our Factory Trained Personnel
- Air and Water balance is performed by our strategic partners in the industry

References:

We provide startup and commissioning services for all of the equipment we install. We have performed these duties for all of our references listed in TAB 4.

Case Studies:

Please see the Hershey Gardens PA case study in “**ATTACHMENT 2 – Case Studies**” on the provided flash drive.

Service and Maintenance

Johnson Controls owns and operates over 140 service centers across the United States staffed by skilled service technicians, project development specialists, sales engineers, application engineers, installation teams, project/construction managers, and local branch leadership who are empowered to make decisions to quickly resolve any issues and ensure customer satisfaction.

Types:

- Preventive maintenance agreements (basic and premium coverage options) for HVAC equipment, controls, security & fire equipment
- Repair services for HVAC, security, fire, technology and building automation systems
- 24/7 emergency service
- Predictive and diagnostic such as Vibration Analysis, Oil Analysis, Refrigerant Analysis
- Replacement parts
- Design and construction services
- Refrigerant compliance reporting
- Connected services such as our Chiller MD
- Remote Operations Center (ROC)-

Define processes for each type of service and/or maintenance of the system or equipment:

Johnson Controls services for equipment and controls are aligned to the 5 values of planned maintenance. No two facilities have the same service needs. A customized service plan, with a combination of reactive, planned, and predictive maintenance strategies, maximizes our customers return on their asset investments and minimizes their risks. Our local service centers develop customized service scopes of work built around the exact building performance requirements and business needs of our customers. The objective is to provide the level of assistance/support required to keep their HVAC equipment and controls efficiently performing at peak levels.



Johnson Controls offers two standard types of preventive maintenance agreements for our customers: basic and premium coverage. The primary difference is that premium coverage includes parts and labor

for unscheduled repairs. Typically, our preventive maintenance plans consist of a combination of the following services:

- routine, time-based maintenance tasks specific to each type of equipment, average runtime, criticality, OEM’s recommended maintenance procedures and required performance;
- predictive and routine diagnostic tasks to identify potential issues operating issues/conditions that may disrupt the performance of the equipment causing unnecessary downtime and negatively impacting the customer’s business operations;
- remote monitoring of alarms
- special 24/7 emergency service

DESCRIPTION	SERVICE COMPLETE	
	BASIC	PREMIUM
	Factory recommended inspection and maintenance program designed to identify issues preventing covered systems from running efficiently. Recommendations will focus on Johnson Controls 5 Values of Planned Maintenance.	
Recommended Number of Visits	4 annual visits (3 operational, 1 comprehensive - customizable to your needs)	4 annual visits (3 operational, 1 comprehensive - customizable to your needs)
Scheduled Operational Inspections	✓	✓
Scheduled Comprehensive Maintenance and Data Backup (if applicable)	✓	✓
Scheduled Service Parts*	✓	✓
Prioritized Unscheduled Service	✓	✓
Unscheduled Repair Parts*		✓
Unscheduled Repair Labor*		✓
24/5 or 24/7 Extended Service Hours		Optional
After-Hours Emergency Call Center	✓	✓
Industry-Leading Safety Program	✓	✓
Factory-Trained Technicians	✓	✓
Dedicated Customer Service Representatives	✓	✓
Customer Portal - Online Access to Service History And Documentation	Optional	Optional

Above is an example of some of the options available for a controls service agreement. We typically customize plans to the individual needs of each customer. For example, our technicians can spend 4 hours a week with a customer’s staff to train operators and review the controls’ system performance and alarms.

Below is an example of some options available for mechanical equipment preventive maintenance. Again, this is just a starting point and easily customizable to the needs of the individual customers.

DESCRIPTION	SERVICE COMPLETE	
	BASIC	PREMIUM
	Inspection and maintenance program designed to identify issues preventing covered equipment from running efficiently. Recommendations will focus on Johnson Controls 5 Values of Planned Maintenance.	
Recommended Number of Visits	4 annual visits (3 operational, 1 comprehensive)	4 annual visits (3 operational, 1 comprehensive)
Scheduled Operational Inspections	✓	✓
Scheduled Comprehensive Maintenance	✓	✓
Scheduled Service Parts*	✓	✓
Prioritized Unscheduled Service	✓	✓
Unscheduled Repair Parts*		✓
Unscheduled Repair Labor*		✓
24/5 or 24/7 Extended Service Hours		Optional
After-Hours Emergency Call Center	✓	✓
Industry-Leading Safety Program	✓	✓
Factory-Trained Technicians	✓	✓
Dedicated Customer Service Representatives	✓	✓
Customer Portal - Online Access to Service History And Documentation	Optional	Optional

We have similar scopes of work for all the HVAC equipment, fire, security and controls equipment that we service. These standard scopes of work are embedded into our Computerized Service Software System.

List Key Personnel:

- Factory trained in-house personnel and equipment to perform most maintenance, service, and vibration analysis tasks.
- Subcontract Oil and Refrigerant Analysis.

Project References:

- We have performed these duties for all of our references listed in TAB 4.

Case Studies:

- <https://www.johnsoncontrols.com/insights/2016/buildings/case-study/mississippi-department-of-information-technology-services>

Installation and Turnkey Contracting

Type:

- Retrofits, new construction, energy retrofit, new controls, controls upgrades, performance contracting

Define processes for each type install of the system or equipment:

Due to the customized nature of our equipment, the process is highly dependent on the equipment and location of the install.

Bonding and Licensing Capabilities:

- \$100,000,000 single bond limit
- \$400,000,000 Aggregate
- Each Branch office has a Mechanical Contractor License, Fire Alarm License, and Security License.

List key personnel:

Factory trained in-house personnel from a local branch perform most installation and turnkey contracting tasks. In some situations, we find it beneficial to contract with specialists for certain specialized equipment or tasks.

References:

We have performed these duties for most of our references listed in TAB 4, including City of Austin, Sarasota County, Los Angeles World Airports, and Baltimore County Schools.

Case Study:

The case study for Oxford High School is included in “**ATTACHMENT 2 – Case Studies**” on the provided flash drive. Oxford High School is a unique funding model for a turnkey project utilizing a municipal lease finance structure (not a performance contract) and voter approved school construction bonds.

Warranty Services

Types:

- Up to 20 years parts and labor
- Refrigeration warranties
- Total systems
- Compressor
- Parts and labor

Define processes for each type of warranty:

See Warranty information at the beginning of TAB 2.

List Key Personnel:

- All Warranty issues are processed and resolved through the Johnson Controls service department.

Project References:

- Please get in contact with your local Johnson Controls representative for information on our success stories regarding warranty work.

Case Study:

- Warranties are included as part of a larger case study. See the Oxford High School case study in “ATTACHMENT 2 – Case Studies” on the provided flash drive.

Energy Services

As more and more organizations prioritize the search for new energy savings solutions, funding can be a barrier and innovative financing is often required to make the vision of energy efficiency a reality. Johnson Controls offers Energy Performance Contracts that put facility upgrades within financial reach. It’s totally accountable: a guarantee that building improvements will deliver operational and utility savings over a fixed period. And it’s low-risk, because Johnson Controls pays the difference if the savings don’t accrue.

- Facility and infrastructure retrofit costs are offset by utility and operational savings, helping businesses and organizations fund capital improvements, maintain cash flow and reduce emissions.
- Johnson Controls helped establish energy performance contracting in 1983 and has implemented more than 3,000 performance contracts in North America alone.
- Facility audits identify opportunities to improve the efficiency of building envelope, lighting, HVAC, water and other systems.
- Performance contract specifies the scope of improvements, associated costs, estimated energy and other savings, grants available for project funding and resulting cost savings.
- Performance assurance staff validates savings and provides effective communications.

Type (Energy Tracking, Energy Analysis, and Evaluation of Potential Upgrades):

- Auditing Services
- Energy Supply Side Professional Services
- Facility and Infrastructure Services
- Post Installation Services
- Training
- Truck and Site Based Services
- Additional Technical Services
- See Value Added Services for detailed information

Certifications of Personnel:

Leadership in Energy and Environmental Design

As a charter member of the U.S. Green Building Council’s (USGBC) board, Johnson Controls helped develop the Leadership in Energy and Environmental Design (LEED) Green Building Rating System. This rating system provides standards and recognition for designing, constructing and operating sustainable,

high-performance facilities. With more than 1,200 LEED credentialed employees, we are able to help our clients navigate the LEED rating system and certification process for both new and existing buildings.

NAESCO

Johnson Controls earned the highest accreditation of the National Association of Energy Services Companies (NAESCO), which is Energy Service Provider.

NAESCO is a national trade association that has been promoting the benefits of the widespread use of energy efficiency for more than 25 years.

Johnson Controls was one of the first companies accredited by National Association of Energy Service Companies (NAESCO) as an energy service company (ESCO) in May 1997 (the program began in May 1996).



Our company was first accredited as an Energy Service Provider (ESP) in May 2003, the first time it was even possible to apply for an ESP, signifying our leadership in the energy efficiency industry.

Our Director of State Government Solutions, Charles McGinnis, is on the Board of Directors for NAESCO, showing our commitment to the growth of this industry and increasing benefits to our customers.

The significance of the NAESCO accreditation lies in the high level of expertise required to obtain it. Applications are reviewed by a committee of industry experts who are unaffiliated with any ESCO or other company under consideration for accreditation. Applicants undergo a rigorous examination of their core competencies and business practices. The review committee also consults with selected customer references. Evaluation criteria include:

- The nature of the applicant's business
- The range of measures and services offered to customers
- The availability of a performance-based project approach
- Ethical business practice commitment
- Engineering, financing, project management, operations, and maintenance capabilities
- The capability of verifying and monitoring energy cost savings

Accredited Energy Service Providers also possess the technical capabilities and managerial competence to provide energy supply through the development and implementation of build/own/operate distributed generation, cogeneration, combined heat and power projects, or arrangement of firm contracting of energy supply.

List Key Personnel:

- In-house, factory-trained personnel in each branch.

Reference:

- See the Louisville Metro case study included in “**ATTACHMENT 2 – Case Studies**” on the provided flash drive.

Case Study:

- See the Louisville Metro case study included in “**ATTACHMENT 2 – Case Studies**” on the provided flash drive.

Equipment Rentals

Types:

- Chillers, Pumps, Transformers, Generators, Cooling Towers, Package Units

Brands available:

- Please contact your local branch for brand availability.

Locations of rental fleet:

- We have rental equipment located nationwide

Process of accessing rental fleet during disaster event:

- Your Project Manager or Account Representative can provide you with access to our rental fleet during a disaster event of in any kind of emergency.

List Key Personnel:

- Johnson Controls – In-house, factory-trained personnel in each branch.
- Aggreko Subcontracted

Project References:

- Houston ISD – Post Hurricane Ike Chiller/Generator Rentals 2008
- Memorial Hermann Hospital System – Post Hurricane Ike Chiller, Pumps, Cooling

Case Study:

- N/A

Financial Services

Our Structured Finance team is responsible for the development of new and creative financing structures that address the financial needs of Johnson Controls customers. The team will match the right financing structure with what is best for each customer and most appropriate for the project. In addition, we have relationships with over 20 financial partners who are experienced in the arena of Lease and Capital Lending Programs. We will work with our partners and your clients to ensure that any and all incentives are identified and utilized to their full potential.

Type:

- Financing, Leasing, Pre-payment Discounts, Guaranteed Savings

Describe type of each funding and availability:

Our approach to financing is to assist in identifying a lender through competitive procurement from a group of qualified lenders and work closely with our clients to provide the most favorable financing package for the project. Johnson Controls receives no commissions or finder's fees for bringing financing institutions to our clients.

Most public entities that we've worked with have selected a tax-exempt capital lease structure. This structure has the least amount of transaction costs and is offered at rates comparable to other forms of public sector financing.

Johnson Controls will help members:

- Obtain the lowest interest rate
- Obtain the lowest cost of financing
- Protect against interest rate fluctuations

- Minimize your time devoted to financing issues
- Explore available alternative funding sources

The following table shows some of the financing options used by our customers.

Financing Option	Description*
Installment Purchase (Buy)	No down payment required. The customer makes even payments monthly over a number of years (typically 5 years). Customers own their equipment. Typically used with projects \$25,000 and up. Flexible payment schedules are available. This is a full term obligation at taxable rates, but financing is done directly through Johnson Controls on a light document package.
Tax Exempt Lease Purchase	Similar to installment purchase, but customer doesn't take title to purchase until the end of the term. Lease terms range from 2 to 10 years depending upon the size of the project and the credit status of the individual customer. Payment frequencies can be matched to fit the Customer need from monthly to annually, in arrears or in advance - again depending upon the Customer criteria.
Operating Lease	Zero money down and low monthly payments. At the end of the term the customer must purchase for Fair Market Value, return, or release the equipment. This type of financing is most often used when an entity has restrictions on ownership or title transfer of equipment.

* Terms subject to credit approval. Descriptions are for information purposes and should not be construed as financial advice.

List Key Personnel:

- Our structured finance team is available and ready to assist. They are contacted through Thomas Staves.
- Ben Speed, Executive Director Structured Finance

Case Studies:

Financing is typically provided as an integral component in larger projects. Please see the Louisville Metro case study included in **“ATTACHMENT 2 – Case Studies”** on the provided flash drive. This project was financed using Johnson Controls Contingent Financing Program, an innovative low risk finance solutions for our customers.

Professional Services

Describe type of each professional service and availability:

Each service is available nationwide.

- Engineering
- Design
- Drafting
- Architectural
- Data Management

Licensing and certification capabilities:

Professional Category	Number of Representatives within Johnson Controls
Licensed Professional Engineer (PE)	90
LEED Accredited Professional (LEED AP)	724
LEED-Green Associate (LEED GA)	69
Certified Auditing Professional – Hong Kong (CAP)	1
Certified Building Commissioning Professional (CBCP)	19
Certified Building Commissioning Professional International (CBCPI)	2
Certified Building Energy Simulation Analyst (BESA)	2
Certified Business Energy Professional (BEP)	7
Certified Carbon Reduction Manager (CRM)	2
Certified Demand-Side Management Professional (CDSM)	18
Certified Energy Auditor (CEA)	20
Certified Energy Auditor International (CEAI)	2
Certified Energy Auditor In Training	1
Certified Energy Auditor-Master’s Level	1
Certified Energy Manager (CEM)	160
Certified Energy Manager International (CEMI)	24
Certified Energy Procurement Professional (CEP)	3
Certified Grant Manager	1
Certified Green Building Engineer (GBE)	5
Certified Indoor Air Quality Professional (CIAQP)	2
Certified Lighting Efficiency Professional (CLEP)	5
Certified Measurement and Verification Professional (CMVP)	66
Certified Measurement and Verification Professional International (CMVPI)	5
Certified Measurement and Verification Professional In Training International (CMVPITI)	2
Certified in the use of RETScreen (CRU)	1
Certified Sustainable Development Professional (CSDP)	6
Distributed Generation Certified Professional (DGCP)	4
Energy Manager in Training (EMIT)	2
Energy Manager in Training International (EMITI)	1

Professional Category	Number of Representatives within Johnson Controls
Existing Building Commissioning Professional (EBCP)	7
Performance Contracting and Funding Professional (PCF)	3
Renewable Energy Professional (REP)	3

List Key Personnel (employed or subcontractor):

- In-house, factory-trained personnel in each branch.
- Johnson Controls has many employees that hold professional licenses.
- Johnson Controls may partner with organizations for the production of design, architectural, and construction documents

References:

We perform engineering and design services for all of our Energy Saving Performance Contracting projects, including the City of Louisville and Oxford High School.

Case Studies:

- Please see the Louisville Metro case study included in “ATTACHMENT 2 – Case Studies” on the provided flash drive.

Site Surveys

Types:

- Equipment condition
- Energy Performance Contracting
- Investment grade building audits
- Security infrastructure surveys
- Technology infrastructure surveys
- Building to business systems integration assessments
- Facility optimization

Describe type of survey:

Johnson Controls has in-house capabilities to accomplish each of the above types of surveys. Plus, we have partnerships with external consultants and Alliance partners to support our efforts

- Personnel (employed or subcontractor):
- Johnson Controls, Inc. has many employees that hold professional licenses.
- Johnson Controls, Inc. may partner with organizations for the production of design and construction documents

Licensing and certification capabilities:

Professional Category	Number of Representatives within Johnson Controls
Licensed Professional Engineer (PE)	90
LEED Accredited Professional (LEED AP)	724
LEED-Green Associate (LEED GA)	69
Certified Auditing Professional – Hong Kong (CAP)	1
Certified Building Commissioning Professional (CBCP)	19

Professional Category	Number of Representatives within Johnson Controls
Certified Building Commissioning Professional International (CBCPI)	2
Certified Building Energy Simulation Analyst (BESA)	2
Certified Business Energy Professional (BEP)	7
Certified Carbon Reduction Manager (CRM)	2
Certified Demand-Side Management Professional (CDSM)	18
Certified Energy Auditor (CEA)	20
Certified Energy Auditor International (CEAI)	2
Certified Energy Auditor In Training	1
Certified Energy Auditor-Master's Level	1
Certified Energy Manager (CEM)	160
Certified Energy Manager International (CEMI)	24
Certified Energy Procurement Professional (CEP)	3
Certified Grant Manager	1
Certified Green Building Engineer (GBE)	5
Certified Indoor Air Quality Professional (CIAQP)	2
Certified Lighting Efficiency Professional (CLEP)	5
Certified Measurement and Verification Professional (CMVP)	66
Certified Measurement and Verification Professional International (CMVPI)	5
Certified Measurement and Verification Professional In Training International (CMVPITI)	2
Certified in the use of RETScreen (CRU)	1
Certified Sustainable Development Professional (CSDP)	6
Distributed Generation Certified Professional (DGCP)	4
Energy Manager in Training (EMIT)	2
Energy Manager in Training International (EMITI)	1
Existing Building Commissioning Professional (EBCP)	7
Performance Contracting and Funding Professional (PCF)	3
Renewable Energy Professional (REP)	3

Advanced technology uses for each type of survey:

A very important step in a successful and productive building survey is having a plan or insight regarding what to look for while surveying the facilities. We will perform a **utility survey** to gain that insight. By performing the utility survey prior to the building survey, we gain insight into which systems are

consuming the most energy, how the utilities are charging for each unit of energy consumed, and what strategies might be developed to maximize energy savings consumption and dollars. In addition, Johnson Controls will evaluate utility and fuel supply opportunities for each project.

After completing the utility survey, we will perform a comprehensive building survey to gain a thorough understanding of the facilities and their systems. This is a critical task to our overall engineering process.

A comprehensive building survey encompasses the following activities:

- General Survey
- Lighting Survey
- HVAC Systems Survey
- Equipment Metering/Performance Survey
- Controls Survey
- Automation System Survey
- Chilled Water System Survey
- Heating Plant Survey
- Water/Sewer Usage Survey
- Renewable Energy Survey
- Security System Survey
- Financial Survey
- Review Master Plans for Additions/Renovation



These activities are performed in order to gain as complete an understanding of the building operation as possible because, without this in-depth knowledge, improvement and savings projections could be meaningless.

List key personnel:

- In-house, factory-trained personnel in each branch.
- Johnson Controls has many employees that hold professional licenses.

References:

We perform engineering and design services for all of our Energy Saving Performance Contracting projects, including the City of Louisville and Oxford High School.

Case Studies:

- Please see the Louisville Metro case study included in “ATTACHMENT 2 – Case Studies” on the provided flash drive.

Pricing

The following table describes our pricing for the services products and services offered:

Product/Service	Discount Type	Discount
Non-Johnson Controls HVAC control, security, fire and equipment products: includes subcontracts, non- Johnson Controls, controls, assessments, tools, management & engineering services and surveys	Mark up over cost	Cost + 30%
Miscellaneous parts	Mark up over cost	Cost + 30%
York Chillers (air-cooled and water cooled)	Discounts from North America List Price (NALP)	NALP less 55%
York Air Handling Equipment	Discounts from North America List Price (NALP)	NALP less 55%
Johnson Controls Terminal Units (VAV & FCU)	Discounts from North America List Price (NALP)	NALP less 55%
Johnson Controls Commercial Unitary Equipment (Series 5-40)	Discounts from North America List Price (NALP)	NALP less 55%
Johnson Controls Large Commercial Unitary Equipment (Series 100)	Discounts from North America List Price (NALP)	NALP less 55%
Johnson Controls DDC controls & Johnson Controls Security products	Discounts from North America List Price (NALP)	NALP less 55%
Fire & Security Alarm Systems	Discount from list price	List less 15%
Johnson Controls Labor associated with installs and retrofits	Discount from Local Branch Published Street Labor Rates	Local Branch Published Street Rate less 10%
Service Labor including Preventative Service Agreements (PSA)	Discount from Local Branch Published Street Labor Rates	Local Branch Published Street Rate less 5%
Packaged Central Plant (400-4500 tons)	Pricing varies depending upon complexity, but customers will receive a minimum of a 5% discount	
Energy Efficient Projects with General Requirements and internal/external Purchase Orders for Construction Related Projects	All Related Services and Products	Cost Plus 30%

Pricing Notes:

1. All labor rates are based upon standard hours.
2. Overtime rates (afterhours, Saturday, Sunday): 1.5 x standard labor rates
3. Overtime rates (Holidays): 2 x standard labor rates
4. Per diem rates: Based upon location and job role to be provided
5. Minimum charge of 4 hours for all overtime work
6. Local branch published street labor rates may be updated annually at the discretion of each local branch
7. Mileage – Standard rates apply for service calls calculated from branch to job site

Not to exceed pricing:

The above pricing is submitted as not to exceed pricing and can be adjusted lower but cannot exceed the pricing above for those projects purchased under the agreement. Customer must indicate on the purchase order the JCI Omnia Contract number.

Additional Pricing Questions

ii. Media submitted for price list must include the Offerors' company name, name of the solicitation, and date on a Flash Drive (i.e. Pin or Jump Drives).

The included flash drive includes our company name, the name of the solicitation, and the date of our response.

iii. Is pricing available for all products and services?

Pricing is available for all listed products and services.

iv. Describe any shipping charges.

Shipping charges are highly dependent on the equipment being shipped and the destination of the shipment. Shipping costs are included in the price, as is disposal.

v. Describe any return and restocking fees.

Return and restocking fees vary according to the equipment purchased. Generally:

- If we are in the installation phase and the requested change is similar in price and operation to the planned equipment, we will make the change as requested.
- If the change is less expensive, we will refund the difference to the customer.
- If the change is more expensive, we implement the change with a formal Change Order.

vi. Describe any promotions, special offers, additional discounts or rebates available. Additional discounts or rebates may be offered for large quantity orders, single ship to location, growth, annual spend, guaranteed quantity, etc.

No additional discounts are offered.

Rebates may be available depending the equipment involved. If rebates or grants are available for a specific project or piece of equipment, the team will assist the customer in applying for the grant or rebate.

vii. Describe how customers verify they are receiving Contract pricing.

To receive contract pricing, Participating Agencies must reference the OMNIA Contract Number on the proposal. Upon request, Johnson Controls will provide Participating Agencies with a pricing validation form to verify contract pricing.

viii. Describe payment methods offered.

We accept wire transfer, check, money order, credit card, and P-card payments.

ix. Propose the frequency of updates to the Offeror's pricing structure. Describe any proposed indices to guide price adjustments. If offering a catalog contract with discounts by category, while changes in individual pricing may change, the category discounts should not change over the term of the Contract.

The pricing will be updated no more than twice a year for new products and services. We are offering a catalog contract with discount by category, and we do not expect the category discounts to change over the term of the Contract.

x. Describe how future product introductions will be priced and align with Contract pricing proposed.

The pricing will be updated no more than twice a year for new products and services. New products and services will be priced accordingly with our existing products.

xi. Provide any additional information relevant to this section.

Johnson Controls is very excited to begin working with OMNIA Partners. The pricing offered in our response is equal to or better than the pricing stipulated in any of our currently awarded cooperative agreements.

TAB 5 – Value Add

i. Provide any additional information related to products and services Offeror proposes to enhance and add value to the Contract.

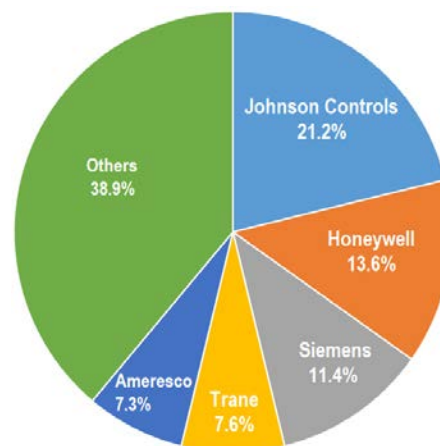
ESPC Experience

Our company has its very roots in the energy efficiency business. Warren S. Johnson, a professor at the State Normal School in Whitewater, Wisconsin, received a patent for the electric room thermostat in 1883. His invention launched the building control industry and was the impetus for a new company.

Our company is a pioneer in developing performance contracting as a viable means by which to update facilities and make them more cost-effective to operate. In fact, we established the concept of performance-based contracting in the area of energy conservation for public, commercial, and industrial facilities in 1973.

Today, we are a leading full-line service provider of energy management and conservation systems and services, as well as mechanical equipment and technology.

We are the national leader in Energy Saving Performance Contracting (ESPC) with over 3100 completed projects and a greater market share and more experience than any of our competitors. We also lead the industry with outstanding safety measures to ensure safety of your students and staff during project implementation.



Energy Saving and Performance Contracting Market: Percent of Sales, North America 2015, Frost and Sullivan

Throughout North America, Johnson Controls has implemented more projects in public facilities than any other firm. Through our experience working with these public agencies, we have developed the ability to install upgrades under tight timeframes without disrupting operations.

As of the beginning of 2020, Johnson Controls is managing 533 active performance contracts with nearly \$7 billion in outstanding savings guarantees.

	Number of Active Projects
Federal Government	69
State Government	35
K12	158
Local Government	132
Higher Education	59
Public Housing	36
Healthcare	20
Commercial	24
Total	533

Johnson Controls Connected Services

(Available as part of maintenance agreement on York chillers only)

This technology gives our team 24/7 read only access to chiller operational data remotely via our iPhones and desktop computers to maximize uptime, help you manage costs, and make informed decisions about your equipment.

Connected Services will notify Johnson Controls personnel if the York chillers are not operating properly. Additionally, it allows our technicians direct access to the Johnson Controls internal intranet for access to all York chiller application data, service manuals and bulletins, parts manuals, and direct access to the York Factory Engineering team.

Value to OMNIA Partners Agencies:

- Increases lifecycle of customer equipment
- Reduces maintenance costs
- Provides key insights into the condition and effectiveness of your equipment

Remote Operations Center

In addition to our strong local team, Johnson Controls has the capability to monitor and operate from our Remote Operations Center (ROC), located in Milwaukee, WI. Johnson Controls has used this strategy successfully numerous clients over the past 20 years.

Value to OMNIA Partners Agencies:

- The ROC can supplement the full-time on-site staff and our local technicians. The ROC can supervise your facility's performance and provide immediate response to emergencies. The UL and Factory Mutual certified ISO 14001 compliant central station monitors and manages more than 3,000 sites in North America.
- The ROC monitors equipment status, alarm points, critical temperatures, etc. 24 hours-a-day, 7 days-a-week. Using predictive maintenance techniques and algorithms, the ROC receives, records, and responds to emerging equipment conditions – and notifies our local resources accordingly, including dispatching the appropriate personnel to resolve an issue before it becomes a problem. The ROC itself is completely self-sustaining with back-up power systems and redundant monitoring technology.



Our technology enables the Remote Operations Center to identify root causes of problems.

Certifications:

- The ROC's dedicated team of CSAA 5 Diamond-Certified building management and monitoring professionals monitor your building's systems 24 hours a day, seven days a week, 365 days a year. It can monitor and/or operate any equipment and critical systems connected to your building automation system, including:
 - HVAC equipment and Building Automation Controls
 - Security and fire systems
 - Lighting, refrigeration and electrical systems (building operations)

Distribution Systems and Cogeneration Plants

Johnson Controls is the largest, non-utility-owned providers of central plant projects in North America. We have implemented well over 1,000 energy and central plant projects – most of which included guaranteed savings and a financial solution. Information resulting from analysis of this data, combined with the experience of over 1,000 engineering professionals, allows Johnson Controls to identify potential areas of risk, and create guaranteed central energy plant outcomes at a lower cost.

Central Utility Plants

Johnson Controls has designed, built, and operated central energy plants for a wide array of mission critical and social infrastructure facilities – including research facilities, industrial sites, universities, hospitals, and governmental entities.

As the largest, non-utility-owned provider of utility plant services in North America, we have unmatched experience developing and operating central plants at the highest possible efficiency.

Value to OMNIA Partners Agencies:

- We compiled data from our more than 1,000 projects into a proprietary database, which is the world’s largest repository of utility plant performance data. Information resulting from analysis of this data allows Johnson Controls to identify potential areas of risk, and create guaranteed thermal service outcomes that address our clients’ goals and objectives.

Cogeneration/CHP Systems

Johnson Controls has conducted extensive research regarding cogeneration technologies and have developed high performance partnerships with industry leading manufacturing and engineering firms. Johnson Controls employs a stringent, rigorous, scalable, and repeatable process that allows us to be successful in the management of unique, innovative, and large-scale projects.

The following list shows a subset of our distribution system and cogeneration plant capabilities:

- Complete analysis of the loads and evaluating multiple design alternatives for best lifecycle cost
- Water side economizers (free cooling)
- Thermal energy storage systems
- Chiller, boiler, cogeneration installation
- Variable volume pumping
- Distribution piping and connections
- Central plant controls and optimizing operations
- Biomass cogeneration plant
- Central cooling plant
- Chiller plant redesign
- Chiller plant optimization
- Heating system redesign and optimization
- Cogeneration/CHP systems
- Steam to hot water system conversion
- Steam trap retrofits
- Steam pressure control

Value to OMNIA Partners Agencies:

- Using natural gas, biomass, biogas, and landfill gas as fuel sources for heat and electric power generation systems installed by Johnson Controls, our customers have experienced considerable economic savings, reduced environmental impact/GHG emissions, and increased operational efficiency and reliability.

Case Study:

- We have been involved in over 120 cogeneration plant projects, including a recent installation of 3.5MW at a Canadian Military Base in Ontario and 7.9 MW at the National Institute of Standards and Technology research labs and office buildings.
- We recently completed design of a new natural gas cogeneration plant for the U.S. Army at Aberdeen Proving Ground (APG). This plant helps APG make significant progress toward energy resiliency, a critical mission for Army installations around the world.



Breaking ground for the new natural gas cogeneration plant at Aberdeen Proving Ground. The plant will provide a substantial portion of the garrison's heating and power needs.

Building Envelope Systems

We investigate and remedy building envelope improvement opportunities to improve occupancy comfort and reduce the cooling load required to condition the space. We use infrared photography and blower door tests to identify leaks and missing insulation in areas that are not visible. Typical surveys include the inspection of roof and ceiling joints, windows and doors, roofs and attics, perimeter and subterranean walls, and penetrations. We also patch and insulate penetrations and install or replace new door sweeps, air curtains for loading doors, wall and roof insulation, reflective roofing, windows, and doors.

- The following list shows a subset of our building envelope capabilities:
 - Window glazing
 - Tinted window film
 - Energy efficient windows
 - Window and door weather stripping and caulking
 - Revolving doors
 - Air curtains
 - Automatic door closers
 - Roofing
 - Insulate walls, roof, floor, soffit
 - Caulk pipe penetrations
 - Seal ceiling to roof gap
 - Solar radiation reduction
 - Reflective coating to roof
 - Weatherproofing

Value to OMNIA Partners Agencies:

- Unwanted heat loss or gain through walls, doors, windows, and roofs can increase energy use and costs. Correct application of thermal insulation and weather stripping plays an important role in reducing these energy costs in many situations.

Grants, Rebates, and Incentives

Faced with tightening budgets, many of our customers are in need of creative financial relief. Our Grant Services and Rebates & Incentives teams have one shared goal: to help solve this problem by finding money for your projects.

Value to OMNIA Partners Agencies:

- These teams identify alternative sources of funding to help you fund more facility improvements, reduce total cash outlay, and realize greater savings.
- Over 400 customers have turned to our dedicated grant experts. *With your permission*, we are ready to collaborate with your to identify qualified funding opportunities, facilitate and develop grant applications, and support required compliance reporting. We can help identify funding opportunities for many improvements including, but not limited to:
 - Energy efficiency improvements
 - Compressed natural gas buses
 - Security equipment
 - Emergency operations planning
 - Renewable energy projects
 - Professional development
 - Environmental education
 - Landscaping
 - Parks, playgrounds, and recreational facilities
- At your request, the Grants Services and Rebates & Incentives teams will use the following process to help you identify and secure funding:
 - We will conduct customized research to identify applicable government and private grants, utility incentives and rebates, and government subsidized loans and bonds.
 - Generate a funding opportunity report that details our findings.
 - Create a project management plan for application development.
 - Manage the grant application process from start to finish.
 - Implement strategy to develop and gather appropriate information for competitive and responsive proposals.
 - Coordinate completion of required attachments.
 - Write, edit, and format response documents.

Review final content to ensure compliance with requirements and adherence to project schedules.

- During our collaboration, your organization will focus on identifying subject matter experts, obtaining application review and approval from executive leadership, contributing key program and organizational information, and submitting a final application. This close collaboration strengthens the final application.

Renewable Technologies

The following list shows a subset of our renewable energy system capabilities:

- Solar photovoltaic
- Wind turbines
- Thermal heating systems
- Alternative energy HVAC
- Geothermal heat pumps
- Street and parking lighting
- Pumping systems
- Microgrid
- Energy storage

- Solar daylighting
- Biomass plants
- Solar thermal domestic water heating
- Solar transpired walls

Solar Photovoltaic

The Solar PV team is responsible for engineering design or oversight of design on solar PV projects, including product selection, vendor relationships, output modeling for PV systems, and preliminary cost estimation.

Value to OMNIA Partners Agencies:

- Energy conservation
- Sustainability
- Energy cost savings

Case Study:

- This team has implemented over 100 Solar projects, including projects at Tulare, CA where we installed a 30 Kw PV system in the carport and a 1 MW system on land that generates 1,860,000Kwh annually.
- The **State of Utah** implemented a **Solar for Schools** program with Johnson Controls that provided 73 5-kilowatt, high efficiency solar modules with inverters, mounting racks, spec sheets, and full warranties. The goal of the program is to mount at least one module in each of the state's 41 districts. We also provided training in renewable energy to help school staff ensure performance.
- Other projects include the State of Utah, Mount Wachusett Community College, the U.S. Bureau of Land Management, and the Marine Corps Air Ground Combat Center in Twentynine Palms, California.
- At **Wyandotte Public Schools** in Michigan, Johnson Controls installed an 8.4 kW-AC photovoltaic system on the roof of Wilson Middle School. The PV array provides electricity directly to the school to reduce the amount of electricity purchased from the local utility.
- This installation is part of a multi-phased performance contracting program implemented over several years to reduce operating costs and improve comfort throughout the school district. The improvements enabled all 11 facilities across the district to obtain ENERGY STAR certification, making Wyandotte Public Schools the first district in the state of Michigan to achieve this distinction.



Solar for Schools is expected to remove more than 8,000 tons of carbon dioxide from the atmosphere over 20 years, equivalent to the carbon offset that would be generated by planting 11,000 trees and letting them grow for ten years.



At San Juan College in Farmington, New Mexico, Johnson Controls provided a PV array, solar thermal floor heating, a geothermal heat pump, controls, and a monitoring system.

The monitoring system was used for student instruction in the outdoor learning laboratory. The building received LEED Gold Certification.

Wind Power

Johnson Controls has experience with implementing power generating wind turbines.

Value to OMNIA Partners Agencies:

- Energy conservation
- Sustainability

Case Study:

- At the Bureau of Land Management Field Office in Rawlins, Wyoming, we installed a new 120-foot wind turbine rated at 100 kW with an estimated output of 300,000 kW hours per year.
- Johnson Controls provided a turnkey installation of a 100kW wind turbine for the Rawlins Field Office. Manufactured by Vermont based Northern Power Systems, the Northwind 100 wind turbine will replace the existing 20kW turbine with a high reliability direct drive (gearless) design.
- An excellent wind resource exists at the site, and the Northwind 100 is expected to produce over 300,000 kWh per year (approximately 60% of the annual energy needs of the Rawlins Field Office).



Alternative Energy Powered Heating and Cooling

Ground-source geothermal heat pump system can provide a "green" solution to heating and cooling challenges, offset capital HVAC costs, and address lack of redundancy.

Value to OMNIA Partners Agencies:

- A geothermal system provides heat in the winter by tapping into the earth to capture its renewable energy. It provides cooling in the summer by removing heat from the home and placing it in the cooler earth.

Case Study:

- At the Claremore Campus Rogers University we provided a 416 tons mono-loop central geothermal system.



Lighting for Street and Parking Lights

Johnson Controls brings the capabilities of **90 dedicated lighting professionals**, including six **NCQLP** certified lighting designers, who bring hundreds of years of experience designing and implementing lighting projects. As the largest non-OEM lighting retrofit contractor in the U.S. with more than **250,000 fixture replacements/retrofits each year**, we are at the forefront of new lighting technologies.

We can develop intelligent, adaptable and future ready designs so additional systems for parking management, traffic control, cameras/safety, digital signage and water/climate detection can easily be added. We also have an in-house material procurement team to get you the absolute best material pricing without additional layers of mark up.

Value to OMNIA Partners Agencies:

- Effective street lighting design and selection focused on extending lifecycles and reducing O&M costs requires specialized expertise. Johnson Controls brings the capabilities of in-house lighting experts, Johnson Controls Lighting Services, as well as specialized modeling, mapping and project

management tools to keep you up to date on the project’s progress. In all, we have worked with numerous municipalities across the country on similar street lighting design and technology selection projects, retrofitting or replacing more than 250,000 fixtures each year.

- Reduced Associated Carbon Footprint - Johnson Controls’ lighting experts will help you select the right solution to significantly reduce the carbon footprint of your street or parking lights. As a leader in local government solutions, we can also expand this effort to your facilities. We can not only deliver this effort, but serve as your long-term energy partner, providing you with a comprehensive, holistic city-wide approach to carbon management and energy efficiency.
- Reduce Costs Associated With Street Lighting Operations - We develop detailed and individualized maintenance programs in conjunction with clients and in coordination with your staff to achieve your organizational, operational, and financial goals. We are vendor neutral, focused only on getting the best technology option at the best price for the customer.
- Reduce Light Pollution Associated With Street Lighting - Johnson Controls knows how to design optimal street lighting projects using photometrics that maximize safety and minimize light pollution, having implemented several dark sky compliant projects nationwide. In Hawaii, we effectively worked with State and community representatives to create a regulation-compliant design for 21,000 streetlights that also had community input and acceptance.

Case Study:

- Johnson Controls has demonstrated experience and a proven process for working with municipalities and utility companies on streetlight acquisition. We worked closely with NYSEG on our streetlight project with the City of Binghamton, as well as with utilities across New York and Pennsylvania as part of numerous other municipal street lighting acquisition projects.
- At the **City of Binghamton, NY**, we reviewed all municipal lighting, including GPS mapping of all lights, and an analysis to determine energy savings. We also used a pilot program in three locations to provide data before full installation. Energy and maintenance savings from this effort will offset project costs paid for through the City’s capital bond.
- We have worked with numerous municipalities across the country on street lighting design and technology selection projects, having recently installed 70,000 LED streetlights. Our dedicated product testing and technology vetting group is continually testing new products and we only recommend those that have achieved approval through a technical, financial, and commercial risk review for use in a long-term performance contract. We also test proven technologies to ensure they perform for cities over the equipment life cycle and use GIS mapping to expedite the streetlight inventory process.
- **Meeting Your Dark Sky Goals** - We have met dark sky requirements on our work with the Hawaii DOT. We accompanied State Highways representatives to meet with the Starlight Committee, the local dark sky organization, to discuss dark sky and other observatory needs. We were able to effectively work with State and community representatives to create not only a regulation-compliant design that also has community input and acceptance.



Microgrid

With our strong background in designing and building renewable applications, Johnson Controls develops or participates in many microgrid implementations.

Value to OMNIA Partners Agencies:

- Energy conservation
- Sustainability
- Energy cost savings

Case Study:

- At **Isle Royale National Park** Johnson Controls installed Distributed Generation and Control Systems to operate as a remote microgrid. This project included three separate locations up to 40 miles apart from one another, including Mott Island, Windigo, and Rock Harbor.
- Johnson Controls installed 23 solar thermal domestic hot water pre-heating systems including 61 collection panels across various facilities at the Rock Harbor and Windigo campuses. The solar thermal systems provide approximately 78% of the estimated annual energy required for domestic hot water at Windigo.
- At the Rock Harbor site, the systems displace 87% of the estimated annual electricity use and 45.7% of estimated fuel oil use for domestic hot water. They conducted energy efficient lighting upgrades, and installed solar PV hybrid system, solar attic fans, and water conservation system.
- The project will alleviate dependence on diesel and showcase the island as a model of sustainability for other Government agencies to follow. The total facility size for Phase 1 is 66,931 square feet. This will result in 2,724 million Btus saved annually and 19,000-gallon reduction in annual diesel fuel consumption.

“Johnson Controls was the most qualified ESCO to assist Isle Royale with our savings goals. Their ECM options are innovative and their strong local resources are unmatched. The Johnson Controls Team understands our objectives and is committed to building a relationship with us.

”

Phyllis Green

Isle Royale Superintendent

Pumping Systems

We have experience with HVAC, indoor air quality, chlorine management, chemical detection and measurement, lighting, locker room water improvements and related equipment in pool and recreational facilities. Our experience includes the implementation of several improvement measures such as swimming pool de-humidification systems and gymnasium ventilation improvements.

Value to OMNIA Partners Agencies:

- Improved efficiency
- Water improvements
- Improved comfort and safety

Waste Heat Recovery and Urban Biogas Utilization

Many of our projects make use of waste heat recovery technology. If not captured and used, waste heat is released to the atmosphere missing an energy efficiency opportunity.

Value to OMNIA Partners Agencies:

- Energy conservation
- Energy generation
- Reduced electrical consumption
- Reduced GHG emissions

Case Study:

- For the **City of Baltimore Back River WWTP**, Johnson Controls developed a combined heat and power plant that uses the remainders of treated wastewater as fuel.
- The plant will generate more than 2.4 megawatts of electricity per year, provide steam to offset process-heating requirements and produce hot water for boilers. As an added benefit, the digester gas cogeneration plant will reduce emissions, save taxpayer dollars, address workforce development, and support the local economy.
- Johnson Controls also designed and constructed a 1,000 kW ground-mount PV system located at the Back River Waste Water Treatment Plant. Using SolarWorld modules and leveraging a grant from the Maryland Energy Administration, this project supports the City’s objectives toward self-generation of 30% of all energy. This is a fixed-tilt, custom racking system suitable for the site’s topography.
- At the **City of Fort Worth**, Johnson Controls began an energy efficiency partnership in 2003 that has grown to seven phases of major infrastructure improvements in 107 city-owned facilities. The \$69 million investment will save the City \$93 million over a 15-year period. Johnson Controls guarantees these savings under the Energy Savings Performance Contract (ESPC) funding vehicle authorized by the State of Texas for public entities.
- The largest of the seven projects occurred at the **Village Creek Water Reclamation Plant** – a \$35 million initiative that has significantly benefitted the City’s goal to establish Village Creek as a Net Zero Energy Facility. This ESPC project reduced electrical consumption by 39%, which has taken more than \$2.5 million off the plant’s electric bills each year. In addition, Oncor Electric provided \$1.3 million in rebates to the City due to electric demand reductions.
- For this project, Johnson Controls developed and implemented a 50,000 lb/hour, 235-psig steam system. Heat was recovered from combustion turbine exhaust, and supplemented with heat created by burning biogas produced at the wastewater treatment plant in a duct burner. This project also involved improvements to increase the production of biogas through the addition of high-strength waste to the digesting bio solids.



Sewer Heat Recovery

Johnson Controls also has experience providing sewer heat recovery solutions. In a sewage heat recovery system, a heat pump is used to capture the warmth of wastewater and transfer it to the clean water stream that is entering homes and businesses.

Value to OMNIA Partners Agencies:

- Energy conservation
- Reduced GHG emissions

Case Study:

- At the **Beaufort-Jasper Water & Sewer Authority** in South Carolina, Johnson Controls used finished water (i.e. potable or drinking water) as a heat sink via a plate and frame heat exchanger for controlling the environment within their administrative building.
- This concept is similar to a Geothermal HVAC. By using reversible heat pump chillers to meet their heating/cooling needs, Johnson Controls was able to provide both heating and cooling for water source heat pumps in the older building section as well as newer VAV/Air Handling system in the newer part of the facility. This project qualified for local utility incentives of approximately \$132,000 and had an annual expected energy savings of approximately \$48,000 per year.

Renewable Energy Services

We have performed this process for over 3,100 projects through our performance contracting. Each assessment considers the needs of the customer and project stakeholders, which can include a board of directors, local government departments, or the general public.

The Johnson Controls strategic planning process enables our customers to clearly identify their facility and operational strengths and weaknesses before construction begins. This allows facility and construction changes to focus on and address outlined deficiencies. Having these groups involved up-front in the process directly influences the final issues addressed in the construction phase.

Throughout our decades of experience in the energy efficiency industry, Johnson Controls has developed a four-phased approach to maximizing energy efficiency for our clients. The phases are: Preliminary Assessment, Project Development, Project Implementation, and Performance Period. The services outlined in the RFP occur during the first two phases of our process.

Our process includes:

- Onsite Evaluation of Energy Consumption
- Return on Investment Analysis
- Consultation and Consultation for the Right Decision
- Custom Designed System

Value to OMNIA Partners Agencies:

- Energy conservation
- Sustainability
- Energy cost savings

Case Study:

- **Bagley School District** chose to add additional classrooms due to growing enrollment and feedback from community, teachers and staff.
- **Warren-Alvarado-Oslo School District** chose to engage in a more involved re-purpose of their elementary school classroom spaces, as well as mechanical upgrade, due to feedback from teachers and staff.
- **Thief River Falls School District** reviewed their math series as a result of feedback given by their student stakeholders.
- **Duluth School District** chose to add/revise the circulation path and design intent, based on specific feedback from students, teachers and staff.

Air Handler Recommissioning

Air Handler Recommissioning is the concept of rebuilding an existing air handler rather than replacing. Air Handlers are often times installed in basements, on rooftops or behind numerous interior walls. All of these locations make it very challenging and costly to replace them. Rather than replace we suggest the units be considered for recommissioning. This is accomplished by upgrading the interior components to bring the unit up to original operating conditions.

Value to OMNIA Partners Agencies:

- The process saves down-time, disruption and substantial money over replacing.

Utility Management

Demand and Usage: Metering, Monitoring and Reporting Energy information is assuming a critical new value as customers move away from the supply services of the traditional utility. No longer is the customer's supply priced exclusively as an anonymous smidgen of a utility's production and/or purchases. Customers are seeing the risks and rewards of pricing catered specifically to their unique load characteristics.

Johnson Controls recognizes this transformation and the opportunity it presents to facility managers using Facility Management Systems. Facility Management Systems are equipped with tremendous capacity to trend and store data. In increasing frequency, that data is energy demand and usage.

Value to OMNIA Partners Agencies:

- At the facility level, that data has some interesting applications. Operators can see immediately the demand impact of running controls measures and optimize those programs to the resulting load profiles. Alarms can be set to alert operators of energy demand and usage levels outside of normal, acceptable ranges.
- The following is a list of a few of the most requested data reports:
 - Load Profiling
 - Bill Calculation
 - Savings Analysis
 - Automated Exception Discovery
 - Measurement and Verification
 - Energy Reliability Reporting

Johnson Controls Fire Protection Products and Services (Formerly Known As SimplexGrinnell)

Thousands of organizations throughout North America choose SimplexGrinnell to install, integrate, upgrade and service crucial facilities systems. Our factory-trained service technicians can support a wide variety of security and life safety solutions and technologies. There is no substitute for our quality, knowledge, commitment and experience and best practices.

We can assure the effective operation of all building safety systems. One phone call can safeguard security, communication, fire, and life safety systems. Trained service specialists staff our North American network of district offices, each one stocked with replacement parts. One of the largest service networks in the industry, it guarantees a fast, effective response.

We offer an unparalleled selection of test and inspection services, preventative maintenance, and around-the-clock emergency services for every life and property protection system. We will easily support multiple technologies from multiple vendors. All of our service specialists spend months in rigorous training. In fact, SimplexGrinnell boasts more than 1,000 NICET-certified technicians with years of hands-on experience.

We work closely with each brand’s research and development engineers, business planning personnel, product development specialists, design, and engineers etc. Our organization also has direct access to up-to-date technical information such as specifications, operation and maintenance manuals, documentation etc. SimplexGrinnell is positioned to continue this vital relationship. One example of our close working relationship is the recent integration of the Software House access control system to the Simplex family of fire alarm panels. This unique integration offers many benefits to system users.

Product Types:

- **Programming Services** - SimplexGrinnell Programming Services unleash the true potential of the integrated security systems. ISSG Programming Services will accomplish this with our certified professionals who will help the customer define their operational goals, program applications, and make sure the system has the inherent flexibility to accommodate changing needs. For example, our ISSG can support key system programming functions allowing our customer to focus on other vital tasks. ISSG wants to ensure our Integrated Security Systems Solution customers operate their security systems at their true capacity. ISSG Programming Services continuously try to increase our customer’s Return on Investment (ROI).
- **Training** - The SimplexGrinnell Integrated Security Systems Group provides expert custom training programs; customized operational programming of the security systems; custom report development; video badge design, development, and programming; database screen design; graphical map design and programming, and CCTV Control Interface programming. The security systems our company provides are software intensive products that must be customized for each customer and each application. Because each customer has specific needs, our personnel are available to customize a system design as well as the software that controls the system.
- **Operational Services** - SimplexGrinnell wants to maximize our customer’s return, while minimizing their risk. SimplexGrinnell can accomplish this on a complete end-to-end solution that aligns with our customer’s daily and long-term security goals. ISSG personnel will work with in-house security personnel developing best practices to maximize system configuration proficiency levels, application integration, and operator ease-of-use. ISSG personnel will ensure that our customers maintain optimum system performance through recurring needs assessments. ISSG also will provide sustained support to ensure proficiency levels are maintained. We can also assist our customers to streamline changes in policies or system functionality. Our recommendations will help optimize our customer’s security staff performance and provide continual process improvement initiatives.
- **Warranty and Service Support** - The SimplexGrinnell service staff is factory trained to service the broad range of products. Our company owns and operates District offices throughout the United States. Each of these offices employs a service staff that supports their respective local areas. We



SimplexGrinnell representatives will carefully examine each customer’s requirements and provide a recommended scope of services.

stress ease of maintenance when we design, solutions for our end users. Our systems include both hardware and software products.

- SimplexGrinnell offers a turnkey service solution that includes the inspection, maintenance, support and repair of systems by factory trained technicians. SimplexGrinnell is prepared to support warranty and service needs 24 hours a day, seven days a week, 365 days each year. SimplexGrinnell technicians will provide the following support ensuring the systems are in proper, safe and efficient operating condition.
- SimplexGrinnell factory-trained technicians will respond to emergency maintenance requirements. SimplexGrinnell will furnish all labor, travel, materials, supplies, parts, equipment, panels, devices, and warning signs for system warranty maintenance. The
- SimplexGrinnell service program includes the following:
 - Scheduled and preventative maintenance including inspecting, testing, adjusting, repairing and parts replacement,
 - Troubleshooting and equipment repair services to remedy failures and malfunctions,
 - Major equipment maintenance and overhaul,
 - Maintenance reports, daily logs, and record keeping,
 - Maintenance manual updating, and
 - Additional work as directed by customers, above and beyond the specified scope of the construction documents.
- **Access Control** - Access control is vital to security and productivity. If the access control system is down, no one gets in the building and work time is wasted. Hundreds of organizations use SimplexGrinnell services to ensure uninterrupted access to their facilities – and only by authorized personnel.
- **CCTV Systems** - Closed Circuit Television cameras must be inspected regularly to ensure the highest levels of uptime and availability. SimplexGrinnell provides a complete range of service and maintenance options for installed video surveillance equipment and security technologies. By optimizing the performance of security equipment, people and property are protected against intruders, fraud and vandalism.

SimplexGrinnell security systems installed throughout the world integrate CCTV equipment from well-respected names as Sony, Philips, Nice, and LORONIX. Our design approach for this project would be designed with “State of the Art” Microprocessor based video switchers, pan-tilt-zoom cameras, and digital recording technology.

- **Fire Alarm Systems** - SimplexGrinnell Fire Alarm Testing and Inspection exposes and resolves potential problems before property and employees are put at risk. Our specialists will keep control panels, pull stations, smoke detectors, and horns in perfect working order.

SimplexGrinnell has extensive fire alarm system expertise, including a thorough knowledge of network multiplexing. Our first system was introduced in the late 1950’s. This fire alarm was an electromechanical “read back” system. Our expertise progressed through a series of technological developments that included solid-state equipment and then microprocessor-based systems.

In multiplexing, the remote location is a subordinate device usually linked to a transponder. It is not intended to “think” on its own and it typically will have few (if any) abilities if communications with the master Central Processing Unit are lost. However, in networking, each remote location is a much more capable device with its own distributed microprocessor and memory and often is

fully capable of operating as a stand-alone fire alarm control panel. Our extensive experience with multiplex technology development gives us a unique understanding of fire alarm network operation.

- **Smoke Detectors** - Smoke detectors are the first line of defense if there is a fire. Keeping detectors in perfect condition is vital to any safety strategy. SimplexGrinnell's world-class Smoke Detector Maintenance Program offers multiple service levels, including testing, cleaning, sensitivity testing, replacement and stock supply. This comprehensive approach helps keep detectors fully operational and minimizes false alarms.
- **Fire Extinguishers** - The danger of allowing an extinguisher to go too long without maintenance is pointing it at a fire – and nothing happens. Fortunately, SimplexGrinnell's trained specialists can regularly inspect and maintain extinguishers, so they will be there when needed.

A portable extinguisher is the critical first line of defense in the event of fire. But the wrong equipment can be harmful or deadly. That's why we offer options for every application, including Class A, B, C, D and K fires occurring in areas with Low, Moderate and High Hazard classification, as well as FE36 clean agent and wet chemical K class types, to name a few. Our specialists are ready to help our customers choose the appropriate extinguishers for their situation.

Our own licensed SimplexGrinnell technicians and large equipment inventory ensure service and delivery when and where it is needed.



SimplexGrinnell is an industry leader in installation, service, inspection and maintenance of portable fire extinguishers.

- **Automatic Fire Pumps** - When fire strikes, water pressure must be available to strike back. SimplexGrinnell experts use special technology to inspect Automatic Fire Pumps, reporting deficiencies and recommending corrective action. Regular inspections, required by local, state and federal codes, can save lives and property in an emergency. SimplexGrinnell's Fire Alarm System will monitor the following fire pump parameters per NFPA 72. They are:
 - Fire pump running
 - Power loss
 - Phase reversal

- **Automatic Sprinklers** - Automatic sprinklers can minimize property damage and save lives. SimplexGrinnell’s comprehensive sprinkler system testing and inspection program is based on NFPA Codes 25 and 13, keeping a facility in compliance with insurance and fire codes. SimplexGrinnell specialists will test and inspect the sprinkler system to detect problems and fully document the results – before failures affect safety. Our products include:

- Wet pipe sprinkler systems
- Dry pipe sprinkler systems
- Standard Response Spray Sprinklers
- Quick Response Sprinklers
- Extended Coverage Sprinklers
- Recessed Sprinklers
- Special Purpose Sprinklers
- Residential Sprinklers
- High-Pressure Sprinklers



Standard Response Sprinklers are Designed for use in Essentially all Applications Including Office Buildings, Libraries, Banks, Theaters, Factories, and Warehouses.

- **Special-Hazard Fire Suppression Systems** - Special-Hazard Fire Suppression Systems protect the key assets and resources that make a business successful. From computer rooms to fuel-pump islands, rare documents to manufacturing equipment, SimplexGrinnell experts test all elements of special-hazard fire suppression systems and recommend maintenance and improvements.
- **Clean-Agent Fire Suppression Systems** - The top clean-agent systems on the market have ANSUL® written all over them. Choose from SUSTAINABLE technology... INERGEN® Inert Gas Systems or SAPPHIRE™ Systems with 3M™ Novec™1230 Fluid. Clean-agents protect sensitive electronics and irreplaceable assets found in facilities across various industries: data processing, communications, industrial, marine, aviation, medical, finance, and cultural/historical.
- **Carbon Dioxide Fire Suppression Systems** - The original “clean” agent, carbon dioxide suppresses fire without leaving behind an agent to damage sensitive equipment. And because there is no agent to clean up, an operation is back in business faster. To provide the most economical system arrangement without sacrificing performance, we offer both High and Low pressure systems including the exclusive ANSUL® “Mini-Bulk” tank technology.
- **Detection & Control Equipment** - When automatic 24/7 fire protection is required, select from our complete line of Simplex Fire Alarm Control Panels and AUTOPULSE® detection, control and fire suppression system release panels. Detection options include smoke, heat and flame detection. Also, consider our VESDA® aspirating smoke detection technology.
- **Kitchen Fire Suppression Systems** - Today’s high temperature appliances make Kitchen Fire Suppression Systems essential. Our semi-annual, 21 point assessment will keep owners up-to-date on ever-changing requirements, keep personnel safe and prevent loss and damage. A specially trained SimplexGrinnell professional inspects all elements of these important safety devices.

Over 1,000 times a day, fires ignite in commercial kitchens. The failure of a suppression system to operate properly will prove very costly. With today's high-temperature appliances using oil and solid fuels, it's essential that kitchen fire suppression systems stay in good operating condition.

SimplexGrinnell provides kitchen's fire suppression and range hood system. From design through installation, our services reflect an understanding of each facility's special requirements. Our experienced personnel understand key deadlines must be met and we realize disruption must also be minimized.

Every SimplexGrinnell system is uniquely designed and specified. Our personnel ensure each system minimizes risk and is designed to protect each kitchen's occupants. Our designers use the most advanced procedures to define each detail of the total system. Each system is fully tested and approved prior to being turned over to our customers.

Our goal is to reduce our customer risk through education, state-of-the-art hardware, expert installation and ongoing service. This approach provides the best defense against kitchen fire loss.

- **Emergency Lights** - SimplexGrinnell will help make sure Emergency Lights work when they are needed. Our emergency lighting service goes far beyond the simple 'Button test.'" We will thoroughly test and inspect the entire system to ensure proper operation. All SimplexGrinnell tests and inspections are in accordance with NFPA 101 (Life Safety Codes). SimplexGrinnell can help ensure compliance with safety codes and reduce the probability of injury while decreasing the risk of liability to property owners and employers.
- **Monitoring Services** - Our monitoring service gives the ultimate peace of mind, around-the-clock electronic surveillance of facilities. We are the only national UL-Listed service with a total focus on commercial facilities. First, we will integrate safety systems with our Central Monitoring Station, the industry's most advanced. Then we will monitor a building 24/7. In an emergency situation, SimplexGrinnell will notify authorities, guide emergency personnel to the scene and keep owners informed. We will even initiate an emergency action plan.

SimplexGrinnell can provide around the clock electronic monitoring for trouble and alarm conditions throughout each facility for hardware that supports dial-out functions. Every second, SimplexGrinnell is actively monitoring many businesses throughout the United States, helping them reduce the risk of loss.

In the event of an alarm emergency, the SimplexGrinnell Central Monitoring Station will notify agencies / individuals chosen by our customers. SimplexGrinnell technicians continue to call the customer contact list until they successfully reach someone. SimplexGrinnell personnel located in the Central Monitoring Station can communicate instantly – by phone, cell phone, fax, or pager – with anyone in the United States. Alert situations are brought up immediately on the screen, along with a profile containing all pertinent information such as:

- The nature of the incident.
- The person or persons to be contacted.
- The procedure to follow in case of emergency.
- The location of where the call is originating.
- Identification of whether a smoke detector, air duct detector or heat detection alarm has been activated.

The center is staffed with rows of customer service representatives wearing headsets that carefully watch computer screens, and interpret information that can mean life or death to people thousands of miles away. If a fire or security event occurs, it triggers a sensor at the customer's site that activates an automatic phone dialer in an alarm control panel that, in turn, is pre-programmed to call the monitoring center.

When the call is completed through the public switched telephone network, the alarm control panel sends an alarm message to the central station for processing and response. Calls received this way show up as status lines on the center’s workstation screens. Each status line is keyed to a database of information that includes the emergency contact information. An operator need only click on a contact name and number to dial out to warn customers and contact personnel.

- **Nurse Call Systems** - Our Nurse Call solutions provide state-of-the-art technology and offer a high level of functionality and durability. These systems also provide ease of operation for nursing and administrative staff. Our systems provide easy to use nursing control station’s that provide all required functions with just the touch of the screen. Our proposed products and services will improve patient care/response by:

Ensuring that the patient always feels that assistance is just a pushbutton away and that confirmation of a response is immediate.

Providing information to a mobile work force in such a way that it is part of their normal routine and does not cause interruption due to re-directing workflow or even re-orienting attention as a result of how the information is presented.

- **Infant Tagging** - SimplexGrinnell Infant Tagging solutions provide peace of mind for parents, caregivers, etc by offering security and tracking of infants and mother-baby matching. These systems also offer simplified operation to easily integrate into the daily responsibilities of nursing and administrative staff.

SimplexGrinnell offers the TotGuard solution, a high-end security system specifically designed for use in Labor & Delivery Department. In addition to providing portal exit protection and alarming, TotGuard can detect when a transponder (tag) has been removed from a wearer. TotGuard is the only system that offers disposable umbilical cord tags.



For example, a tamper alarm is activated when a signal from the tag is received, indicating it has been tampered with or removed. Tamper alarms are reported to the System Console via the communications network and the System Console displays alarms with a flashing red icon and an alphanumeric description of the patient’s identity and photo.

- **Wandering Resident** - SimplexGrinnell Wandering Resident solutions provide peace of mind for patients, caregivers, etc by offering security and tracking of residents. These systems also offer simplified operation to easily integrate into the daily responsibilities of nursing and administrative staff.

Wandering residents and patients can be a challenge in today's busy Nursing Homes, Care Centers and Assisted Living Facilities. With the increasing focus on quality of life and person-centered care planning, providers are seeking ways to reduce the use of restraints and medications. In addition to providing dignity, mobility, and a safe environment to wandering residents and patients, the AllGuard protection system provides staff members with more time to focus on resident and patient care.

AllGuard automatically contains potential wanderers by locking doors or holding elevators until either the wanderer leaves the alarm zone or a staff member intervenes. With one of the smallest, longest lasting, and waterproof wrist tags available in the market today, RoamAlert Plus provides maximum control of facility exit points while minimizing unnecessary staff interruption.

AllGuard uses modular components to not only suit JFK Memorial Hospital’s budget, but also allow for easy growth and expansion. Individually customized for each facility, the AllGuard system allows each client to choose the options that fit their requirements.

- **Emergency Communication** - SimplexGrinnell also offers a single integrated communication system used for telephone paging, and highly intelligible broadcast messages and emergency voice evacuation. The SAFEPATH® Supervised Audio Facility Equipment is the first UL Listed supervised system to offer this unique multi-functionality.

This solution helps to guide people to safety during fire or other emergencies and warn potential victims of dangerous environmental conditions or security threats.

Buildings and complexes must be capable of broadcasting highly intelligible emergency messages in order to save lives. It is not enough to install loudspeakers that blast unclear messages to already disoriented people within a building or even in external locations. Design is the key. Appropriate speakers are strategically placed such that communication is not only heard within the structures, but also understood in the identified outside areas as well, for a comprehensive and seamless solution.

Safety and security will be optimum when warnings are understood and heard clearly from all locations so that people have enough time to follow planned responses.

- **Visual Communication** - SimplexGrinnell’s new Text Messaging Appliances offer the latest capabilities in providing the clear visual display of messages tailored to specific emergency or non- emergency conditions. This highly visible, multi-color (red/yellow/green) light emitting diode (LED) display can display messages readable to distances of approximately 200 feet away.



The TrueAlert Visual Display Can Provide Useful Messages Under Normal Circumstances and Life-Saving Direction in Emergencies.

The Simplex TrueAlert Display is a UL-Listed IDNet addressable device that is controlled, monitored, and powered by one or more Simplex 4100U fire alarm panels. The True Alert text messaging appliance displays automated emergency messaging but allows custom end user messages to be displayed as well. Informative end user messages are overridden in the case of an emergency and a designated emergency message is displayed.

Simplex TrueAlert Displays provide situation-specific visual messaging that can complement the voice messaging capabilities of the 4100U. The visual text messaging display is an ideal solution for the hearing impaired or for noisy environments where auditory voice messaging is ineffective.

- **Personal Communication** - SimplexGrinnell offers personal communication technology that offers many benefits including:
 - Improve response time in emergencies by ensuring instant delivery of important information in a consistent manner, minimizing loss of life, property damage, and financial impact
 - Free up key personnel to perform critical tasks by automating manual, time-intensive processes
 - Improve effectiveness by eliminating potential failure points due to human error
 - Reduce miscommunications or misinformation with accurate, consistent messages

- Increase outreach through process efficiencies that enable more frequent communications
- Comply with legal communication-related regulations through real-time and historical reporting
- Plan ahead for various emergency situations—such as natural disasters, power outages, and pandemics—by setting up communication scenarios in advance.
- Manage the system easily and cost-effectively—no expensive hardware, software, updates, or maintenance with flexible data management options
- Feel confident with maximum data security through our Oracle/Linux platform and built-in redundancy at every level
- **Interior Communication** - New capabilities in digital information transmission, processing, and control offer the opportunity for comprehensive auditory and visual messaging, tailored to situation and facility. A logical development, spearheaded by SimplexGrinnell is the incorporation of such advanced messaging capabilities directly into Fire Alarm Systems.

As SimplexGrinnell has spearheaded these developments, we have paid careful attention to changing government regulations as well as an abundance of codes and standards. Our systems have been developed to meet all applicable industry codes and standards, thereby ensuring widespread applicability of our technology solutions. We are providing a comprehensive approach to the design, installation and enforcement of signal applications in alarm systems.

- **Campus Duress Alarms** - SimplexGrinnell has teamed with Iwatsu Electric, Ltd. to offer the 5195 SimplexGrinnell Advanced Digital Information Exchange (ADIX) PBX System. Many of the proposed system components have been designed and developed by Iwatsu engineers. Iwatsu was established in 1938 and has supplied over 60 million telephones to customers throughout the world

The SimplexGrinnell 5195 ADIX Digital PBX System offers the latest in digital microprocessor controlled telecommunications technology. Digital solid-state components provide quiet, reliable, long-life operation. The SimplexGrinnell 5195 system provides a cost effective package that is capable growing to meet future user and industry requirements. The system’s architecture supports our standard 5195 universal trunk and station telephone cards system-wide that control all digital telephone activity. The 5195 has a distributed control multi-microprocessor architecture that uses digital speech paths for clear, noise free audio reproduction of voice and data. A host of programming and operational features are supported throughout the network from a single point of administration. System wide changes are easily made. Non-blocking telephonic links within the 5195 system ensure the user obtains intercom dial-tones every time they pick up their phone.

Johnson Controls Fire Systems

We offer fire controls systems designed to meet the needs of everything from a small stand-alone system to a large integrated network. We offer fire alarm systems designed to meet the needs of small and large facilities — and to integrate seamlessly with our other building management security system technologies. Our Intelligent Fire Controllers can integrate with Johnson Controls Metasys® Building Management System, providing far greater control over building protection and performance. We will work with OMNIA Partners members to tailor a system to their specific requirements.

Johnson Controls life-safety solutions range from stand-alone panels to networked systems integrated with your building management systems. We incorporate the latest technologies such as centralized control, interactive video, identity credentialing and video-based detection for an added level of

protection, compliance with government standards, and to assist first responders. Whether you need systems for a single-story building or a multi-building campus, we can tailor a solution to fit your needs.

Product Types:

- **Intelligent Fire Control Panels** - Intelligent Fire Control Panels that offer modularity, easy system planning and integration with our Metasys® Building Management System.

Johnson Controls Intelligent Fire Controllers (IFC) can zero in on each device and identify its specific location and status, saving time, and confusion in an emergency. As your business needs change, the modular design of our controllers lets you network additional panels or add new devices as your facility grows. This flexibility means substantial cost savings in your investment.

Best of all, you can integrate IFC systems into Johnson Controls Metasys® building management system. The result is a single network that seamlessly integrates your life-safety and building controls systems, providing greater visibility and control over the performance of your building.

- **Intelligent Fire Integrator** - Intelligent Fire Integrator for linking to third-party systems and Intelligent Fire Annunciator for centralized information access

The IFI is a single point of control for your fire and life safety systems. This integrated facilities monitoring network links your IFC series fire alarm system to other 3rd party systems. From a single workstation, your facility manager can view and manage diverse systems from different manufacturers using an intuitive graphical user interface.

- **Mass Notification Systems (MNS)** - Mass Notification System for informing large groups quickly

Our MNS can simultaneously notify multiple people via text messaging, automated voice dialing, desktop alerts, and indoor and outdoor loudspeakers. Each of the following solutions can be custom-built to meet your needs.

- In-Building Systems
- Audio and visual alerts in and around your building
- Integrated fire alarm and mass notification systems
- Notification appliances such as speakers, strobes, LED signage and more
- Wide-Area Systems
- The same benefits of in-building systems
- High-power speaker arrays and horn loudspeakers
- Mobile, portable, wired and wireless options
- Distributed Recipient and Personal Alerting Systems offer the ability to reach a large, diverse, or mobile group with multiple communication needs via:
 - SMS/text messages and pagers
 - Automated voice calls and faxes
 - Email alerts, web postings and social networking sites
 - Pop-up computer notifications

- **JWS - 3 Web Server** - JWS - 3 Web Server to allow remote access to the intelligent fire control network via the Internet or an Intranet

The JWS-3 is an optional web-based device that acts as an HTML server, which allows remote access to the IFC Network. The user can view the history of a fire alarm control panel, event status, device properties, and other information based on pre-defined access permissions. All data available is a “snap-shot” of the data on the IFC Network at the time the browser requested the information.

- **Digital Voice Command** - A multi-channel digital audio evacuation, paging, and firefighter's telephone system

Johnson Controls Security Solutions

The Johnson Controls' **Security Solutions** team is uniquely qualified in that it can provide consulting, engineering and implementation services in all aspects of security and life safety.

We offer a broad spectrum of security and fire protection technologies and services designed to provide safe, comfortable, and efficient facilities. Our ability to install and integrate the systems that are essential to you results in lower first costs, as well as operational efficiencies. Our security and fire detection solutions encompass protection of people, assets, physical property, and intellectual property.

Johnson Controls has made the necessary investments in resources and people to be able to successfully integrate multiple security systems and building technologies, which allow customers to build upon their existing infrastructure and technology – and prepare for future needs. Design, planning, and maintaining buildings are all accomplished with Johnson Controls serving as the single point of responsibility for the design, installation, commissioning, optimization, and even long-term operation of all fire and security systems.

We will work with OMNIA Partners members to "build with the end in mind," helping them design facilities and equipment that provide for maximum productivity, efficiency, and safety – during the construction phase and throughout the lifecycle of the facility.

Case Study:

- At the University of Utah we installed a campus wide security system consisting of CCTV and Fire safety systems.
- We installed a campus wide security system at CUNY – College of Stanton Island.
- At the University of MN, the security, system integration project included installation of an IP network, a Johnson Controls IFC2-3030 fire alarm system with digital voice evacuation, 32 amplifiers, active smoke control using exhaust fans and stairway pressurization, emergency paging, Software House access control, American Dynamics digital video recorders and Pelco cameras.



Types of Service:

- **Security Engineering and Design** - We help our customers plan, specify, and build their security management systems by applying our innovative and comprehensive approach to integrated security management system design. We assist our customers in all phases of this work including schematic design, design development, construction document development, project cost estimating, bidding, construction administration (observation) and (post construction) system implementation services.

Our employees are experts at transforming technology into practical solutions for the full spectrum of security services delivered seamlessly – from Systems Integration (planning, engineering, design, installation, and service) to ongoing Systems Management (maintenance, video/alarm monitoring, badge administration, database management, alarm notification and patrol/response). Our employees have been shaped by decades of experience.

We have helped many customers with costly legacy security systems migrate to an integrated, cost-effective security solution for each of their facilities. Johnson Controls' ability to integrate and manage various components of a comprehensive security system means that customers no longer need separate contracts with several unrelated service providers. Johnson Controls has experience working with all leading security product manufacturers.

We integrate products and services into a practical solution – matched to the needs of our customers. We are willing to assume turnkey responsibility for the entire result. We also have developed a world-class services and support capability to ensure that the solution remains effective throughout its entire lifecycle.

We provide seamless integration for fire management, electronic security, access control, intrusion detection, maintenance management, lighting control, SCADA, information technology (IT), and overall facility monitoring in all types and sizes of buildings, correctional institutions, campuses, military bases, and infrastructure of national and international dimensions. We integrate over **1,000 compatible products** from more than **125 manufacturers**, allowing industry and government to protect investments in systems and products already installed, and to preserve their infrastructure prerogatives for the future.

- **P2000 Security Management System** - Our integrated network access control building technology works seamlessly with our P2000 security management system to help buildings achieve maximum security while increasing efficiencies and lowering costs. Built on open standards and compatible with virtually any third party program, the P2000 can integrate multiple businesses, buildings, and security systems to achieve interactive, real-time security management. The P2000's built-in web browser allows users to access the platform from a central location — or remotely, through web-connected devices. The P2000 works with virtually all current security products, system technologies, and IT networks, including:

 - Mercury Hardware, making it easy to change security solution providers
 - Digital Video Recorders that manage recording, camera and storage functions from a single workstation
 - Metasys® Building Automation System, allowing you to include real-time access and security data
 - HR Databases that integrate your badging system with your HR database to simplify security operations and reduce human error
 - Intelligent IP Door Locks, streamlining installation and enabling real-time communications where it's difficult to install wired locks
 - IP Intercoms that combine live video, intercom requests and open door functionality in one workstation
 - Intrusion Panels, enabling extended control and auditing of your facility's doors
 - Elevator High-Level Interfaces that enable access control integration with your elevator system
- **Video Surveillance** - Johnson Controls is a world-class systems integrator. Our highly skilled team understands your need to reduce risk, comply with regulatory policies, and safeguard your most critical assets. Our ability to install, integrate, and service advanced business security camera systems will help you do just that, in addition to lowering your costs and increasing operational efficiency. We offer the following solutions:

 - Digital video management systems
 - Network and digital video recorders
 - Surveillance cameras

- Advanced analytics
- **Information Protection and Network Security Consulting** - The Global Security Solutions team has the ability to provide specific services in the areas of Information security policy and procedure review and development, network security architecture design, and database integration.

As a key technology contractor, Johnson Controls serves as the Single Point of responsibility for managing the design, delivery, commissioning, and service of all technology systems. Johnson Controls also has the capability to develop a technology plan that considers the long-term needs of an organization’s business and optimizes existing infrastructure, helping to leverage existing investments and lower overall project costs.

Johnson Controls’ approach to technology contracting helps to balance first cost and life cycle costs, converge individual systems into a technology system, provide for enterprise-level cross communication and help organizations reduce overall risk and improve operations.

Taking a holistic view of the building’s systems, Johnson Controls will design and deliver a converged technology solution to support your business objectives. With Technology Contracting, we act as the single point of responsibility for the design, integration, installation, and service of the building’s technology, creating an optimized infrastructure, while reducing risk, minimizing change orders, and meeting budget and deadline.

Our technology solutions provide:

- Integrated approach to technology design and implementation reduces risk, minimizes change orders, and meets budgets and deadlines
- Reducing construction costs saves on capital
- An optimized infrastructure cuts installation costs as well as lifecycle costs, reducing implementation costs up to 8-12%
- We manage multiple contractors, and take sole responsibility for making the technology work
- Technology independent integrator works with a market-leading group of innovative partners to create the connected environment that meets objectives
- Operations optimized before buildings are occupied
- **Security Management Consulting** - We help customers evaluate, develop, implement, and maintain their overall security programs through vulnerability and risk assessments, studies and investigations, physical security surveys, security master planning, development of security policies, standards, procedures and instructions, and the development and implementation of numerous, customized security training programs.

Johnson Controls has deep experience managing the full range of security services, from overseeing guard services to performing vulnerability/risk assessments to implementing integrated, state-of-the-art security and fire systems. We have helped a multitude of clients develop an overall security management approach, utilizing a combination of physical guard services in conjunction with cost-effective electronic security solutions for their facilities. Our experience with large, dispersed client portfolios allows us to take a holistic view of a client’s security requirements and develop a portfolio-wide solution.

- **Professional Security System Deployment Services** - The Global Security Solutions team has the ability to provide highly specialized services for the deployment of complex integrated security management system projects. These services are built around the custom engineering and

development required to develop, deploy, and operate projects involving Physical Security Information Management (PSIM) and Physical Access Identity Management (PAIM) solutions.

In addition to its full-time staff, the Johnson Controls' Security Engineering team coordinates and partners with many other security technical and engineering employees throughout the world at the many company regional and branch office locations. These adjunct staff members represent virtually every discipline within the security industry and are recognized experts in their specialized fields.

The Johnson Controls' Global Security Solutions team also has established relationships with numerous security industry professional associations and organizations and, when needed, draws expertise and adjunct staff members from these groups to support Johnson Controls projects internationally.

Recommissioning

Recommissioning is the process of inspecting, testing, and adjusting a building's mechanical and electrical systems to ensure building performance consistent with the original design intent and the owner and occupants' needs.

Value to OMNIA Partners Agencies:

- We can ensure items such as proper airflow and rebalancing the system, replacing motors and variable speed drives, restoring economizer cycles, and enabling hot deck and cold deck reset.

Specialty Systems

Throughout our many years in energy efficiency, we have gained a lot experience providing additional services for our customers.

Types of Service:

- **Kitchen/Laundry Equipment** - We bring experience redesigning, replacing, and installing major kitchen ventilation, cooking, heating and refrigeration equipment. We have extensive familiarity with large use washing and drying laundry equipment and other specialty equipment for facilities of all sizes. Measures associated with these specialty areas include:
 - High efficiency water heating and ice-making
 - Instantaneous hot water heating and removal of storage tanks
 - Waste heat recovery for dryers and chillers
 - Conversion of electric equipment to gas
 - Water savings measures for recreation, kitchen and laundry
 - Ozonated laundry upgrades
- **Pool Systems/Environment and Recreational Spaces** - We have experience with HVAC, indoor air quality, chlorine management, chemical detection and measurement, lighting, locker room water improvements and related equipment in pool and recreational facilities. Our experience includes the implementation of several improvement measures such as swimming pool de-humidification systems and gymnasium ventilation improvements.
- **Additional Systems** - The following list shows a subset of our specialty system capabilities:

▪ Loading dock air curtains	▪ High efficiency water heating
▪ Ceiling systems	▪ Instantaneous hot water heating and removal of large storage tanks
▪ Electrical power systems	▪ Waste heat recovery for dryers and kitchens
▪ Emergency generators	

- Turbine generators
- Switch gear
- Elevator modernization
- Waste management
- Waste compactors
- Red bag waste
- Pool covers and pool heat recovery
- Air and water balance
- Power factor correction
- Fleet management
- Laundry systems
- Conversion of electric kitchen equipment to gas
- Water savings measures for kitchen and laundry
- Ozonated laundry upgrades
- Kitchen equipment
- Dishwasher replacement
- Walk-in coolers optimization
- Exhaust system optimization
- Kitchen design
- Start-up and commissioning

Training

By collaborating with Johnson Controls, OMNIA Partners members will have the ability to customize additional training to meet its needs.

The training information included here provides an overview of the options and methodologies available. This will help to promote the efficient and proper use of the facilities by the staff.

To create a truly focused learning experience, we carefully customize our training programs to align with your goals and objectives. To help determine what training will be required for your staff, we will work with you through a series of brief interviews and simple tests with representatives from maintenance supervisors, maintenance staff, facilities engineering, and quality control.

The program steps include the following:

- Define current maintenance and operating procedures
- Define required maintenance and operating procedures required for new equipment
- Review training options with plant engineering and maintenance
- Determine and organize training programs, based on need and skill level, for functional groups within the facility (supervisors, maintenance staff, custodial, etc.)
- Perform training with each group using a mix of theory, hands-on practice, and maintenance manual application
- Record each session for future use by staff
- On a regular basis, repeat and redesign new needs and re-establish competency on old ones



A key factor to ensure a successful relationship is to have all facility staff trained and fully knowledgeable.

- Johnson Controls Institute** - Professional instructors with industry experience, state-of-the-art equipment, and hands-on lab activities are hallmarks of the Johnson Controls Training Institute experience. The Institute has been widely regarded as one of the best education sources in the building environments industry since its establishment in 1947. Each year, more than 4,000 clients and employees attend courses at our institute.

Our training centers offer support from our global company. On-site training features hands-on training on your own equipment. For a listing of courses, please visit our web site at www.johnsoncontrols.com.

- Packaged Training Programs** - We realize that off-site classroom instruction is not always practical. For that reason, the Institute produces several packaged training programs to assist our clients. Convenient and effective in-house training is possible through a variety of instructional videotapes, sound/slide, and computer-based training programs produced by the Institute.

The computer-based training programs use the power and flexibility of the computer to deliver an interactive learning experience. Interacting one-on-one with the computer, the student can gain a better working knowledge of HVAC systems, energy management concepts, and facilities management system operation. The student can review each modular lesson after the initial learning experience to refresh skills as needed.

- Branch and On-Site Instruction** - Because branch training can provide a more convenient and cost-effective alternative to our standard Institute locations, we have converted many of our more popular courses to branch training programs. We can also conduct select courses using remote seminars that allow group training of the client's facilities, systems, and equipment. On-staff Johnson Controls Institute instructors teach the remote seminars at client sites, our offices, or another convenient location depending on the needs of the client group. We use portable equipment simulators that enable employees to practice without jeopardizing building operations.

Another option for on-site instruction is on-the-job training, which allows our engineers, technicians, and mechanics to provide instruction at your facilities. This training is excellent for practical and productive learning. Materials include course handbooks, on-site laboratory sessions, and examinations. Typical topics include energy management, HVAC systems maintenance, and facility management system operation. Finally, phone support and technical assistance are always available over the phone or during our normal client service visits.

Training Methodologies

- *On-site classroom training*
- *On-site equipment demonstrations and maintenance procedure review*
- *On-site operations demonstrations*
- *Computer-based training programs (CD ROMs)*
- *Videotaped training programs*
- *Off-site training at the Johnson Controls Institute*
- *Off-site training at selected college campuses in the area*
- *Written training manuals*
- *Written/functional operator manual*

Value to OMNIA Partners Agencies:

- Our programs can be comprehensive to increase the self-sufficiency of your staff or more focused to develop competencies where needed. We design our training programs in conjunction with our service offerings to protect your investment while maximizing the efficiency of your operations. Through continuous support and professional development, we align our services with your mission.

Added Value for Education Customers

Johnson Controls can help the education mission of school districts, community colleges, and Universities through internships, learning labs, career training, and student engagement.

Internships and Co-ops - Johnson Controls offers internships and co-op programs for University students within our Automotive Experience, Power Solutions, and Building Efficiency business units. Interns generally work on projects related to their areas of study. Johnson Controls provides hands-on experience in a student's educational field, and they will learn to apply their studies to real-world situations whether in the United States, Asia, or the Middle East.

Given the breadth and magnitude of this effort, interns can be engaged in a variety of areas, including engineering, finance, public policy, applied research, and communications. Graduate and undergraduate level students are evaluated based on grade point average, leadership abilities, communication skills, and relevant coursework.

- **Learning labs** - At many colleges and universities, Johnson Controls implements a learning classroom program where we collaborate with the faculty to develop experiential learning. This program provides a unique opportunity for students to learn first-hand the application of facility and renewable energy improvement measures. They will have the opportunity to study monitor, and analyze what has been installed on campus.
- **Career Training** - At Johnson Controls, we understand that beginning a career is daunting. It is the first step to a new stage of life. Johnson Controls helps new college graduates quickly realize their potential with programs that ease students from an academic life into their new professional life and offer mentoring for students as they continue in their careers.
- **Student Engagement** - We have student engagement programs that focus on building energy awareness through educating and engaging students, staff, and faculty on the importance and impact of their behavior on energy efficiency. Johnson Controls' has collaborated with our higher education customers in the development of several customized educational programs to augment a university's curriculum.

Case Study:

- We recently developed new Sustainability curricula for the University of Hawaii Community College system as a part of our ESPC projects across their campuses on Oahu and Maui. We have student engagement programs that focus on building energy awareness through educating and engaging students, staff, and faculty on the importance and impact of their behavior on energy efficiency.