Volume 26 - Issue 6

February 2020

BOA

Building Operators Association of Canada

Official Publication of the Building Operators Association (Calgary)

What's Inside?

Cover Image by pjurisic0 from Pixabay

Executive & Committees

President Les Anderson	president@boacalgary.com (c) 403-921-0648
Vice President Mark Arton	vice.president@boacalgary.com (c) 403-305-7029
Associate Vice President Mike Gerald	associate.vice.president@boacalgary.com 403-861-9091
Chairman Mark Arton	chairman@boacalgary.com (c) 403-305-7029
Treasurer Carrissa Speager	treasurer@boacalgary.com (c) 403-969-0329
Secretary Monika Bhandari	secretary@boacalgary.com (c) 403-470-4169
Education Committee Shaun McLean	education@boacalgary.com
Membership Committee Casey Kok	membership@boacalgary.com (c)403-200-3767
Promotions Committee Mike Thompson	promotions@boacalgary.com
Activities Committee Mike Gerald	activities@boacalgary.com (c) 403-861-9091
Technical Concerns Kyle D'Agostino	technical@boacalgary.com
Webmaster Casey Kok	webmaster@boacalgary.com (c) 403-200-3767

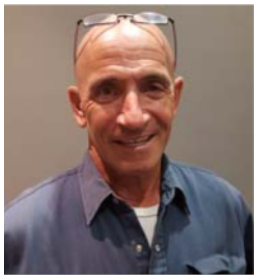
BOA Canada Magazine printed & distributed by:

SURE PRINT & COPY

Important Phone Numbers

Emergency.....911
Alberta Boiler Association.....403-291-7070
Alberta Labour (Emergency).....403-297-2222
Buried Utility Locations.....1-800-242-3447
City of Calgary (All Departments).....311
Dangerous Goods Incidents.....1-800-272-9600
Environmental Emergency.....1-800-222-6514
Poison Centre.....403-670-1414
Weather Information (24hr).....403-299-7878

Presidents Message



I hope this message find you and yours well and in good health

Successful leaders are transparent enough with themselves and others to admit or share their wrong doings so that those around them can also benefit from their learnings. They call this wisdom and many leaders lack it, because they are too proud to recognize mistakes as valuable learning moments for themselves and others.

It also takes courage to ask for help. In fact, in a good leader it shows a strength in those that do, and a weakness of those that don't. When you ask for help, you're putting yourself out there, becoming vulnerable, afraid that people will see you as weak. The truth is the opposite and yet it's still so difficult to do for many.

Any great leader will tell you; they have made many mistakes along the way. They will admit that it was the collective insight from bad decisions that taught them invaluable lessons and how to see opportunities in everything and anticipate the unexpected more quickly.

Making mistakes is such an important part of the leadership journey. I am certainly not suggesting being reckless when leading. but be responsible to know or find out why things didn't work in your favour and how you could have approached things differently. Because we live and learn in a more short-term, rapid-paced world of work. We need to be more mindful of pacing ourselves, take the time to self-evaluate and learn from our mistakes and share the lessons with others. Leaders need to be innovative, have ability to see through problems. These are forward thinkers and team leaders. They're not so stuck in their ways that they don't reach up and ask for a hand. So, know that it's a strength to ask for help, but a big weakness to assume "You got it" as a leader, share that information with others so they as well learn good leadership standards.

BOA
Building Operators Association of Canada
Building Operators Association
Box 22116, Bankers Hall
Calgary, AB T2P 4J5
www.boacanada.ca

In closing, I would like to share information for the Biennial Trade show in May 2020. This month, we will be calling companies that had a table in 2018 asking if they want to renew, after that we will be open to sell. It is a nice way to spend the afternoon with people you know. In 2018 we had 250 people walk through the trade show. It will be held at the Danish Canadian club once again. It is a warm and intimate affair where we can meet others in our industry. We have other associations participate as well.

Last time BOMA, IFMA, IPE had tables there and I would hope that they will come again.

Our next meeting is February 11, I hope to see you there, the guest speaker is Craig Hatch of CFMS Alberta. Craig is one of the best commissioning agents have ever met. I would recommend not missing this speaker. Invite and bring a friend. There is always a free sandwich and a coffee if your feeling peckish.

Warm regards,

Les

BGE Indoor Air Quality Solutions

When clean air matters.

We deliver clean air to protect your people, places, processes, and products.

Longer Lasting

Cost Effective

Energy Efficient

BGE Indoor Air Quality Solutions Ltd.

When clean air matters.

5711 – 103A Street NW • Edmonton, AB T6H 2J6

T: 780-436-6961 F: 780-437-1097 TF: 1-866-436-6961 • www.bgecleanair.com

DCS AGENCY LTD.

Manufacturer's Representatives for:

- Xylem / Bell & Gossett
- Watts Water Technologies / Watts Radiant
- Watts / Powers Mixing & Electronics
- Tekmar Control Systems
- American Standard Brands
- Clemmer Technologies
- Laars Boilers
- De Dietrich Boilers
- Gastite Flexible Gas Piping
- Sisco P/T Plugs
- WGI Western Gauge & Instrument
- Griswold Flow Control Valves
- Metraflex Pipe Connectors
- Rinnai

Alan Proctor Shawn Oakley Greg Smith
#7, 6130 – 4 Street S.E., Calgary, AB. T2H 2B6
Tel: (403) 253-6808 Fax: (403) 259-8331
www.dcsalesltd.com

Ensuring the Best Fuel Quality at the Most Critical Time

ContractorCheck

COMPLYWORKS Get ready to work.

Alberta Diesel Dialysis

Fuel Polishing Systems & Service

Western Canada Distributor for ReFuel Systems

Mike Thompson 403 813 9999
albertadieseldialysis@gmail.com
www.albertadieseldialysis.com

Test Your Operator IQ!

Are you equally adept at troubleshooting problems in the boardroom and the boiler room? As the resident facility guru, there's a lot riding on whether or not you know the difference between sounds control and a sound investment.

If you're ready for 21st century challenges, then you are ready for our monthly Operator IQ challenge…answers on page 17.

1) One of the following is a value for atmospheric pressure at sea level:

a) 1 atm
b)101.3 kPa
c)273 degrees C
d)14.7 lb/in^2

2) The heat gained or lost by a body during a change of state is the product of its _____ and the specific latent heat:

a. volume
b. mass
c. weight
d. length

3) The heat gained or lost by a body during a change of state is referred to as _____ heat since there is no change in temperature:

a. sensible
b. latent
c. specific
d. total

4) The process by which a solid changes into its liquid state at a certain fixed temperature by the absorption of heat is called:

a. fusion
b. liquefaction
c. solidification
d. vaporization

5) Conduction heat gains are calculated on the assumption that:

a. solar heat varies from hour to hour as sun changes position
b. solar heat gains are not included
c. construction details are unimportant
d. the "U" value is not used

Lighting Controls Upgrade Guidelines

Focusing on control strategies, space needs and planning principles can help managers create successful installations

By Craig DiLouie (Maintenance Solutions)

Lighting controls can reduce lighting energy costs by up to 35 percent while offering maintenance and engineering managers additional capabilities for tuning light levels and brightness, controlling color, and generating data they can leverage for new operational efficiencies. But achieving real value in a given upgrade requires the proper specification and application of controls.

In new buildings where energy codes regulate design, controls typically must be installed to control nearly all lighting. In an existing building undergoing an upgrade from traditional sources to LEDs, controls can be installed as part of the upgrade wherever sufficient opportunity and value intersect. That value can be sweetened by utility rebates when applicable.

To deliver successful lighting controls upgrades, managers need to focus on several key issues — understanding control strategies, determining space needs, and applying planning principles.

Focus on strategies

Lighting controls and systems are essentially input/output boxes. The input might be based on occupancy, a time event on a schedule, a light level or a signal from another building system. The output is typically switching — on or off — or dimming — raise or lower light level — though demand for new capabilities such as color output control and data generation is growing significantly.

The combinations of these inputs and outputs give managers a range of available control strategies that are driven by the primary application need, which can be energy management, visual needs, or operational efficiency.

For energy management, managers need to consider four main strategies, all based on the principle that lighting should be turned off or reduced when occupants do not need it:

• Occupancy sensing can automatically switch or dim lighting and switch plug loads when a space is unoccupied and potentially send a signal to a security system.
• Scheduling can automatically switch or dim lighting and switch plug loads based on occupancy predicted at certain times.
• Daylight response entails automatic switching or dimming lighting when daylight raises light levels.
• Institutional task tuning involves tailoring light levels by individual space.

For visual needs, the two main strategies are:

• Manual-control switching or dimming based on human intervention.
• Color tuning involves the manual or automatic adjustment of color output, either by tuning white light on a scale between warm — orangish to white — and cool — bluish-white — or by producing saturated colors for a communication or entertainment purpose.

For operational efficiency, managers can produce data and monitor a lighting system for failures, and they can use this automatically generated information to analyze energy use, monitor equipment for maintenance, track inventory, and

Continued on page 9…..

KENKEN PUZZLE

How to solve the Kenken puzzle: (answer on pg. 21)

- Fill in the numbers from 1 -6 (in this case 6, because the kid is 6x6).
- Do not repeat number in any row or column.
- The numbers in each heavily outlined set of squares, called cages, must combine (in any order) to produce the target number in the top corner using the mathematical operation indicated.
- Cages with just one square should be filled in with the target number in the top corner.
- A number can be repeated within a cage as long as it is not in the same row or column.

60×			3÷		4−
2÷		3	5−	3−	
2÷	11+				2÷
	4−		11+	2	
5+	3+				6
	2	10+		2−	

…continued from page 7

identify efficiencies in space utilization, among other uses.

Outputs are driven by what managers want the controls to do. For visual needs and information, the application is driven primarily by these goals because the inputs do not depend on the application, only the outputs.

For example, if a manager wants to enact space-optimization strategies based on measuring occupancy patterns, then a data-delivering control system is optimal. If a manager wants the lighting system to change the color quality of white light in a classroom to allow teachers to signal a change in activity, then color tuning is optimal. And if a manager wants users to be able to adjust light level for presentations in a conference room, some type of dimming solution is optimal.

For strategies dictated by energy management, the controls application is driven by conditions that enable various inputs. If the space is intermittently occupied, managers can consider occupancy sensing. If the space is predictably occupied, they can consider scheduling. If the project is designed at a fixed light level significantly higher than that needed in individual spaces, consider institutional task tuning. And if the space has ample daylight, daylight response is a viable option.

Looking at the outputs of switching or dimming, the most appropriate choice depends on the way occupants use the space:

Occupancy sensing and scheduling. If the space is unoccupied and lights are not needed for safety or security, switching is optimal. But if the space is unoccupied and the lights must stay on — such as in a lobby, corridor, or stairwell — dimming is optimal.

Institutional task tuning. Generally, the output is dimming because the space is used while this strategy is in effect.

Daylight response. The control effect might occur while the space is occupied. If occupants are performing demanding, stationary tasks, then dimming is optimal. For transitional spaces such as lobbies, managers can implement switching with less likelihood of disrupting occupants.

Article reprinted with permission from “Maintenance Solutions” Magazine. For more information or more articles, please visit their website at: www.facilitiesnet.com/ms/

Maintaining Boiler Safety

Safety

Regard for personnel safety is an item that is first and foremost in the design, construction, operation, and maintenance of industrial manufacturing facilities. Sometimes serious and fatal injuries are caused by catastrophic equipment failure that stems from years of seemingly innocent neglect or poor operation and maintenance.

When it comes to potential catastrophic failure caused by poor operating and maintenance practices, there is probably no more potentially dangerous equipment operating in an industrial manufacturing facility than steam and power generating equipment. The boiler is often the largest, most expensive, and potentially most dangerous piece of equipment, if not operated and maintained properly.

Even the most sophisticated high-temperature and pressure watertube boiler can be simply described as pressure parts (drums, headers, and steel tubes) which contain high-pressure steam and water. The tube surface transfers heat to the water from a fuel being combusted in a controlled manner outside of the tube surface. A firetube boiler is simply the opposite with the fuel combustion on the inside of the tube surface.

Boilerfailures

Catastrophic boiler failures can threaten the safety of operating personnel. Fuel explosions, low water, or poor feedwater quality generally causes them.

Fuel explosions

One of the most dangerous situations in the operation of a boiler is that of a fuel explosion in the furnace. The inherent cause of fuel explosions can generally be traced back to an operations or maintenance problem. If a steam boiler is properly operated and maintained, including performance of all the necessary routine preventive maintenance, the likelihood of a fuel explosion is virtually eliminated.

Low-water incidence

The potential for severe and even catastrophic damage to a boiler as a result of low-water conditions is easy to imagine, considering that furnace temperatures exceed 1800 F, yet the physical properties of carbon steel change dramatically at temperatures above 850 F.

The only reason a boiler can withstand these furnace temperatures is the presence of water in all tubes of the furnace at all times when a fire is present. In a very short period of time, continued firing during a low water condition literally melts steel boiler tubes.

Typical industrial boilers are natural circulation and do not utilize pumps to move water through the tubes. Instead, these units rely on the differential density between steam and water to provide the necessary water circulation. The water level is critical to ensure a flooded supply of water to downcomer tubes.

Because sufficient water level is critical, modern boilers are equipped with automatic low-water trip switches. Some older boilers may not have these relatively inexpensive devices.

If a boiler does not have low-water trips, have these devices installed. Low-watertrips protect boiler pressure parts by shutting down the fuel combustion process, eliminating high temperatures in the furnace when the natural circulation cooling process is interrupted.

Control of the boiler drum level is sophisticated, and even the best-tuned control systems cannot always prevent a low-water condition. The water level in a steam drum is actually a fairly unstable compressible mixture of water and steam bubbles that shrink and swell with pressure changes, firing rate changes, and when colder feedwater is added.

All properly designed installations - both gas/oil and solid fuel units -- should be installed with redundant and dissimilar low-water trips, conductive and float-actuated types. Unfortunately, an alarming number of boilers equipped with low-water trips are destroyed each year.

- There are several common reasons for low-water trip failures.Disabled trip circuits. A typical

Continued on the next page...

….continued from the previous page.

scenario involves bypassing the switches to eliminate nuisance trips due to improperly tuned controls, safety device failure, etc. This approach is a Band-Aid to cover the real problem and should never be allowed.

- Inoperative trip switches. Trip switches should be blown down regularly to exercise the trip devices and remove potential sludge buildup. A properly designed installation allows the trip devices to be blown down each shift without the boiler tripping offline. This blowdown keeps them clean and verifies proper operation of the low-water protection and alarm circuitry.

Poor feedwater quality

Feedwater is treated to protect the boiler from two basic problems: buildup of solid deposits on the waterside of the tubes and corrosion.

Water that enters the boiler is vaporized to steam, leaving solids behind in the form of scale or buildup in the areas of highest heat transfer rate.

A buildup of scale deposits inside boiler tubes produces an insulating layer which inhibits the ability of the water to remove heat from the tube surface. If this condition becomes severe enough and allowed to continue, the result is localized overheating of the tube and eventual failure.

Whether caused by low water or poor boiler water quality, potentially dangerous steam explosions can occur when overheated pressure parts suddenly fail under high pressure. A steam explosion in a boiler house can, in seconds, produce ambient conditions of intolerable heat and reduced oxygen levels below survivable limits.

To prevent deposits on tubes, the level of solids in the boiler feedwater must be maintained at acceptable limits. The higher the operating pressure and temperature of the boiler, the more stringent the requirements for proper feedwater treatment.

Unless a power generation turbine is involved, or the raw water quality Is particularly bad, most industrial boilers operate at sufficiently low pressures to enable the use of simple sodium zeolite water softeners for feedwater treatment.

At higher pressures and when turbines and superheaters are involved, more complex feedwater treatment systerns, such as reverse osmosis and demineralizer systems, are required.

Waterside tube corrosion is generally caused by the existence of contaminants in the boiler feedwater, which is a combination of makeup water and condensate returns.

Feedwater contaminants include oxygen, excessive water treatment chemicals, oils, miscellaneous metals and chemical compounds, and resin.

Dissolved oxygen is a common and constant threat to boiler tube integrity. The use of modem, sophisticated cbelant water treatment programs has dramatically improved the cleanliness of boiler heat transfer surfaces to such an extent that essentially bare-metal conditions exist.

Since only a thin magnetic oxide film remains on boiler metal surfaces, oxygen control is extremely important. The typical boiler facility is equipped with a deaerating feedwater heater to remove the majority of oxygen. In boilers operating below 1000 psig, the oxygen scavenger - sodium sulfite - is continuously fed to the storage tank of the deaerator to ensure the absence of free oxygen.

One of the most serious types of oxygen corrosion is oxygen pitting, which is concentrated on a very small area. Pressure part failures can occur, even though a relatively small amount of corrosion and loss of metal has been experienced.

A chelant boiler water treatment program that is not properly maintained to ensure proper dosages of chelating chemicals can create problems with consequences these chemicals are injected to prevent Chelant corrosion or attack develops only when excess concentrations of sodium salt are maintained substantially above the control level for an extended period of time. The resultant attack is a dissolving or thinning of metal, unlike oxygen pitting. The attack concentrates on areas of stress within the boiler, such as: rolled tube

Continued on the next page…

….continued from the previous page.

ends, baffle edges, tube welds, threaded members, and other nonstress relieved areas.

The inadvertent introduction of acid and caustic can cause the most devastating immediate damage to a boiler. The presence of either of these chemicals can cause many different types of corrosion and destruction ofimetal integrity. These chemicals are commonly introduced into a boiler for several reasons.

- Equipment failure or malfunction. A typical problem might be leaking regenerant isolation valves or failure of an automatic controller, resulting in an inadequate rinse cycle. - Poor water treatment system design. Double block and bleed valve systems should be used wherever any regenerant chemicals are introduced into the water system to protect against damage due to valve failure.
- Poor water treatment system training and operation. If operators are not properly trained and cognizant of the importance of operating these often-sophisticated systems, they might be responsible for pumping concentrated acid and caustic into the boiler. A less likely problem might be improperly carrying out the regeneration of water treatment equipment, such as improper rinsing of residual acid and caustic.

Undetected contain I nation of condensate returns is another common problem, which leads to boiler feedwater contamination. Contaminants can vary from metals such as copper and iron, to oils and process chemicals.

Heavy metal contamination is usually a function of the materials of construction of the process equipment and the condensate system.

Oils and process chemicals are generally introduced into the condensate system due to process equipment failures or corrosion-caused leaks in equipment, such as heat exchangers, pump and gland seals, etc.

The biggest risk associated with condensate system contamination is a catastrophic failure of a piece of process equipment, which results in the introduction of significant quantities of undesirable chemicals or compounds into the boiler. For this reason, prudent boiler operations should include continuous monitoring of the quality of condensate being returned from the process with automatic dump capability in case of contamination.

Another problem that sometimes causes severe boiler fouling is the introduction of ion exchange resin into the boiler feedwater system. This situation is frequently caused by the failure of the ion exchange vessel internal piping or lateral screens.

Depending upon the operating pressure of the boiler and type of resin, this problem can result in a severe coating of resin material on boiler surfaces. An inexpensive and very worthwhile method to alleviate the chance of this type of contamination is to install a resin trap on the outlet of any ion exchange vessel. Resin traps not only protect the boiler from contamination, but also prevent the loss of very expensive resin.

Boiler feedwater contamination and resultant corrosion can be a slow, degenerative process, or 'an instantaneous, catastrophic event. Routine and efficient maintenance procedures greatly mitigate the chances of both types of occurrences. Consistent boiler water and feedwater quality monitoring and testing provides operating personnel not only with historical data, but also with a timely warning anytime feedwater quality changes dramatically.

Improper blowdown

When boiler feedwater is high quality, it is maintained by following proper blowdown practices. The concentration of undesirable solids in boiler water is reduced through the proper operation of a continuous purge or blowdown system and by performing intermittent bottom blowdowns on a regular basis.

The sodium zeolite water softening process is an ion exchange operation that exchanges harmful scale-producing calcium and magnesium ions for sodium ions.

Article written by William L. Reeves. First printed in the Operator magazine in September 2001.

Interested in reading the rest of the article? Please visit
http://boacalgary.com/artboiler5.html

THE FAIR PRACTICES OFFICE

Offering independent, expert, free of charge services to injured workers, their dependants and employers

Overview

The Fair Practices Office (FPO) was established following a review of the workers' compensation system in 2017. Following the review, one improvement made to the system was to create a separate agency—the FPO—to provide an independent platform for the work of appeal advisors, system navigators, and for fairness and system reviews.

Who we are

The FPO opened its doors in Edmonton and Calgary in December 2018.

The FPO is ***independent*** from the Workers' Compensation Board (WCB), the Appeals Commission for Alberta Workers' Compensation (Appeals Commission), and the Medical Panels Office (MPO).

The FPO's services are ***free of charge*** and essential to ensure fair compensation, meaningful rehabilitation for injured workers, a sustainable and affordable compensation system and to restore and strengthen trust in the workers' compensation system.

How we do our work

The FPO appeal advisors are ***experts*** with an average of 16 years of experience and training. FPO services are delivered with 54 full-time positions across four branches: the Navigate the System Branch, the Worker Appeals Advisor Branch, the Employer Appeals Advisor Branch, and the Fairness Review Branch.

Navigate the System Branch (NSB): NSB is responsible for supporting injured workers to navigate the workers' compensation system, including the WCB, the Appeals Commission and the MPO. It explains eligibility requirements, options, operations and practices and connects injured workers with supports and services outside the workers' compensation system.

Worker Appeals Advisor Branch (WAAB): WAAB is the largest branch within the FPO. It offers injured workers and their dependants timely, fair and independent advocacy and dispute resolution services at no additional cost to them. WAAB helps workers and their dependants through the WCB appeals processes by providing early resolution whenever feasible, education and information, advice, and representation throughout all levels of appeal, including the Dispute Resolution and Decision Review Board (DRDRB) and the Appeals Commission.

Employer Appeals Advisor Branch (EAAB): Employer appeal advisory services is new for employers. This branch provides independent and free advisory and advocacy services to employers covered by the WCB who require assistance with a claim or account matter. Like WAAB, EAAB also focuses on early resolution whenever feasible, education and information, advice, and representation throughout all levels of appeal. EAAB and its staff work separate and apart from WAAB staff.

Fairness Review Branch (FRB): The FRB serves an ombudsman-like function with a special focus on how decisions are made (but not on the decisions themselves). FRB's complaint review process is impartial and evidence-based. It works with the respective system partner(s) on implementing an appropriate remedy to address any identified issue of behavioural or procedural fairness, including dealing with breaches of WCB's Code of Conduct.

Harold Robinson, LLB
Fair Practices
Commissioner

Contact information:
Email: info@fpo.alberta.ca
Phone: 1-866-427-0115
Website: https://fpoalberta.ca/

Edmonton Office:
10th Floor, Sun Life Place
Suite 1000, 10123 – 99 Street
Edmonton, AB T5J 3H1

Calgary Office:
6th Floor, Braithwaite Boyle Centre
#602, 1701 Centre Street NW
Calgary, AB T2E 7Y2

January Executive Meeting Minutes

Building Operators Association (BOA) Executive Meeting Minutes

January 8, 2020, Co-op, 11th Ave SW, AB, 5:05 pm

Carissa S, Mark A, Mike T, Les A, Shawn M, and Monika B

Agenda:

Trade Show
Tours
Website
Guest Speakers
General Meeting Format

Trade Show:

- Will take pace May 12, 2020 at Danish Canadian Club
- Approximately 30 booths capacity, cost: $350, will be offered to Exhibitors from last Trade Show starting in until March 15; will open to all other Exhibitors thereafter
- Les to connect with Impark for parking on the day of the Tradeshow

Tours

- Discussed possible venues for educational tours

Website

- Discussion at looking at new website host and CRM for BOA

Guest Speakers

- Next general meeting: Cougar Technical Services and Fair Practices Office will be speaking
- Future Guest Speakers include:
    - CFMS Craig Hatch – in February
    - BB&E Peddi Roofing – in March
    - Rick James – James Electric – in April

General Meeting Format

- Possible new format:
    - Introductions
    - Safety Talks!
    - 50/50 and snowball
    - Guest Speaker
    - New Business

February Guest Speaker

- Review the re-commissioning process. The best kept secret in reducing building operating costs.
- Deliverables for the re-commissioning process
- Overview of energy metering
- Overview of continuous commissioning

All of the above will be focused toward what / how the building operations staff can assist and/or be involved in the processes.

About the presenter:

Craig Hatch, C.E.T., C.E.M., CCP – CFMS Alberta Ltd.

Craig has provided commissioning services for 19 years and 23 years of construction experience. He recently completed the new International Facilities Project at the Calgary Airport which is over 2 million square feet of the international and trans boarder terminal building. His roll on the IFP has been the Project Leader and he is responsible for liaising with the client and consultants, scheduling the commissioning tasks and ensuring the reports are issued and tracked. Over his long and varied career, Craig has been involved with many types of projects, including, office buildings, community centers, healthcare buildings and schools, including projects for University of Calgary, Mount Royal University, Ryerson University and University of Toronto.

Craig's commissioning project experience ranges from new construction, existing buildings, mechanical system upgrades and building automation upgrades. Most recently, he has attained his Certified Energy Manager (CEM) through the Association of Energy Engineers (AEE). He is also a Certified Commissioning Professional (CCP) with the Building Commissioning Association (BCxA). Craig is the President and General Manager of CFMS Alberta Ltd.

BOA CALGARY OPERATOR MAGAZINE ADVERTISING RATES

1/8 page	$200	Premium Locations	
1/4 page	$400	1/2 page inside/outside cover	$850
1/2 page	$775	1/2 page outside cover	$900
Full page	$1000		

Deadline for ads is the 10th of each month. For any questions, please email: advertising@boacalgary.com
Payment can now be made via Paypal at www.boacalgary.com/payment.html

FEBRUARY AGENDA
BOA CALGARY
GENERAL MEETING

Approval of Agenda
Approval of Minutes
Guest Speaker
50/50 Draw
Snowball
Safety Talks
Old Business
Executive Reports:
Activities
Education
Treasurer
Membership & Promotions
Technical Concerns
New Business
Adjournment

JANUARY GENERAL MEETING ATTENDANCE

Not provided for time of print.

Kenken Puzzle Answer

60× 5	3	4	3+ 2	6	4− 1
2÷ 2	4	3	5− 6	3− 1	5
2÷ 3	11+ 6	5	1	4	2÷ 2
6	4− 5	1	11+ 3	2 2	4
5+ 4	3+ 1	2	5	3	6 6
1	2 2	10+ 6	4	2− 5	3

TEST YOUR OPERATOR IQ ANSWERS:

1) b 2) b 3) b 4) a 5) b

Advertisers Directory

Automation
WestExcel Automation Ltd. 403-404-3660

Boiler Services
Black & McDonald 403-235-0331
Quality Combustion & Controls 403-936-0065

Cleaning / Janitorial Services
Regency Cleaning 403-520-7788

Drain Services
Revive Pipes 403-903-4445

Engineering Services
Building Envelope Engineering 403-287-0888

Filtration
BGE Service & Supply 403-243-5941

Fire Protection Services
Constant Fire Protection 403-279-7973
Sprouse First & Safety 403-265-3891

HVAC & Electrical Services
Black & McDonald 403-235-0331

Indoor Air Quality Services
Gasonic Instrument Inc, 403-276-2201
Black & McDonald 403-235-0331

Lighting Services
Calgary Lighting Products 403-258-2988

Motor Services
James Electric Moter Services 403-252-5477

Supply Services
DC Sales Corporation 403-253-6808

Alberta Certified Power Engineers Online Directory

Check to see when your power engineer certificate is due for renewal!

www.absa.ca/apecs/powerengineersearch.aspx

Next time you are looking for a product or a service provider, please consider connecting with one of our advertisers and members of the Building Operators Association of Calgary.

Support those who support YOU!