



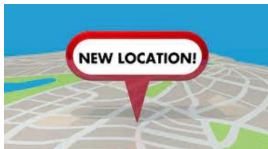
BOA

Building Operators Association of

Canada

Official Publication of the Building Operators Association (Calgary)

September 2026



Thornccliffe Greenview Community Association

5600 Centre Street N at 5pm

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Front Cover: Maria L.



President's Message

**I hope this
message finds you
& yours well and
in good health**



Tuesday September 8th is our first Guest Speaker meeting for the season. Meetings will again be held at the **Thorncliffe Community Centre**. **Speakers** are subject matter experts in their field, and everyone is welcome to attend. If you are coming, bring a co-worker, the knowledge you can acquire is incalculable. The meeting times begin at **5PM** and end around 7PM

The BOMA 5th Class Building Operator Course will be held in the near future. BOMA Calgary still needs students to sign up and fill the class. Contact **BOMA Calgary at 403 237-0559** for the details and to sign up for the course. Sign up can also be done on BOMA website, www.boma.ca. It has been a

struggle to get this off the ground again, but BOMA has it in hand. BOMA is ready and excited to train Building Operators.

We still intend to offer a trade show later this year. Please stay in touch for the date and the details.

I hope to see you at the next meeting.

Respectfully

Smiles))

Les Anderson
BOA Calgary President

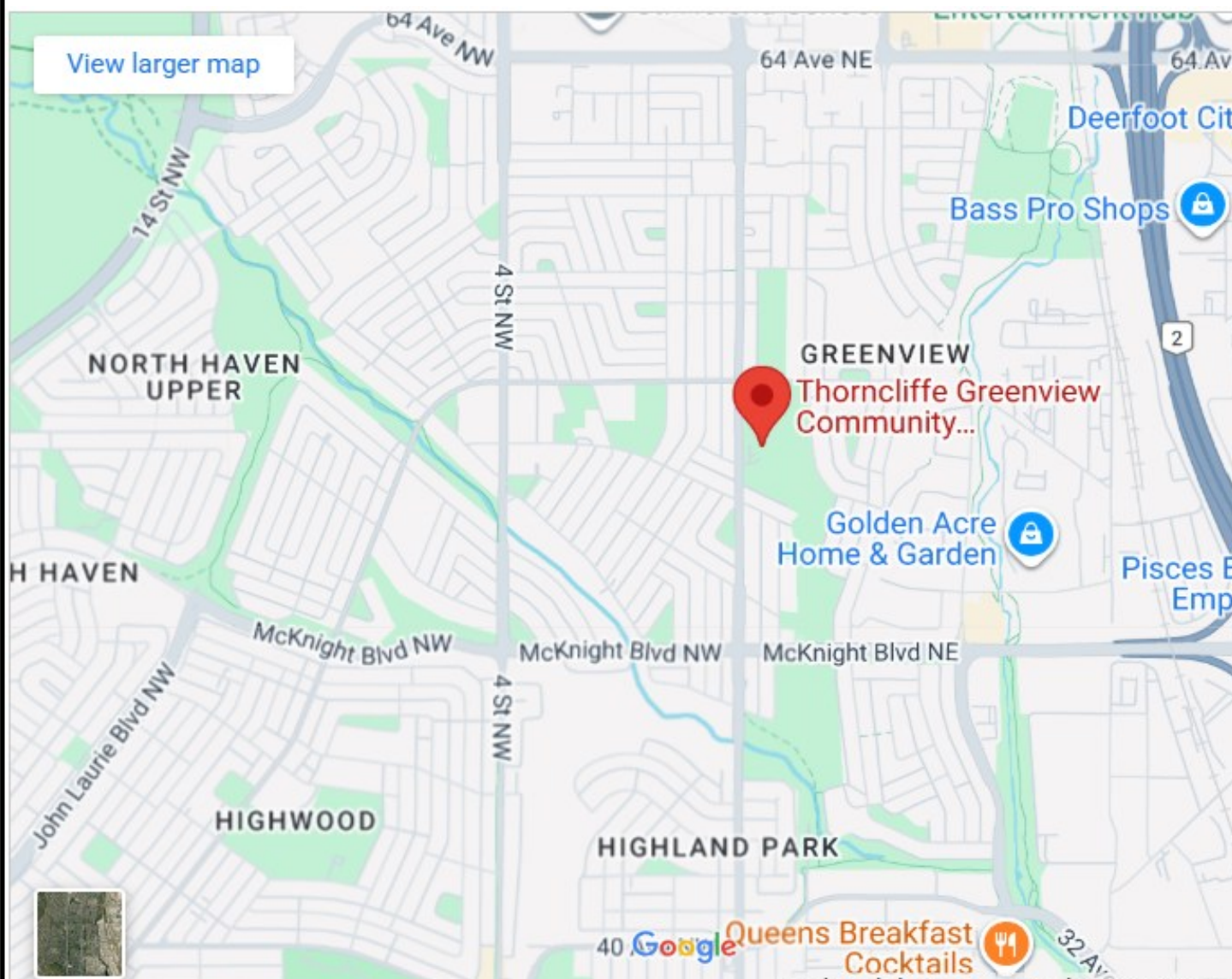




**Join us at our Monthly Meeting on
Tuesday September 8th, 2026**

at our new location:

**Thornccliffe Greenview Community
5600 Centre St N, Calgary, AB T2K 0T3**



**Meeting starts at 5pm to 7pm
Free Parking**



the pressure equipment safety authority

ABSA, the pressure equipment safety authority, has a new office in Calgary, located at:

#100, 1111 - 57 Ave. NE.

All in-person activities in Calgary, including exams, will be held at this office. Our Edmonton office, where our Finance team processes payments, is unaffected.

If you have any questions or concerns, please reply to this email or phone **ABSA Reception in Calgary at 403-291-7070.**



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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.

Try our monthly Operator IQ challenge...answers on page 34

- 1) A firetube boiler commonly used for hot water heating systems in residences and small apartments is the:
 - a) Scotch firetube packaged unit
 - b) HRT unit
 - c) steel plate vertical unit
 - d) firebox unit
 - e) tubular unit
- 2) A steel plate vertical firetube unit is divided into two sections and the upper part is often called the:
 - a) reversing section
 - b) furnace
 - c) expansion tank
 - d) flue gas collector section
 - e) heat exchanger
- 3) Initially the firetube boiler was not up to manufacturing expectations because:
 - a) too many equipment suppliers were involved in its manufacture
 - b) the boiler plate was inferior
 - c) there were no legislative standards set
 - d) the unit was constructed at the factory
 - e) tradesmen were not licensed and properly qualified
- 4) Packaged firetube boilers:
 - a) are not very rugged relative to portability
 - b) have very specific design pressures to meet customer needs
 - c) require relatively small building volumes
 - d) require special foundations or footings
 - e) have maintenance access difficulties
- 5) Smaller firetube boilers are low cost and:
 - a) have simple rugged construction
 - b) require very critical water treatment
 - c) are not very suitable for ON-OFF operation
 - d) do not cause much damage on waterside rupture
 - e) reach operating pressures very quickly from cold start
- 6) The advantages of a packaged boiler are:
 - a) lower freight costs because of less handling
 - b) lower initial cost because they are mass produced
 - c) quality control is easier to implement
 - d) the boilers can be factory tested before being sent to the customer
 - e) requires little time to put the unit into operation at the plant site

Safety Precautions During UPS Maintenance: [Hatch Power Inc.](#)



UPS systems are critical to the operation of data centers, healthcare facilities, industrial plants, telecommunications infrastructure, commercial buildings, and other mission-critical environments. Because a UPS contains **high-voltage electrical components, stored energy, batteries, capacitors, and potentially high fault currents**, maintenance must be performed with a strong focus on personnel safety and system reliability.



Proper UPS maintenance is not simply about keeping equipment operational—it is about ensuring that technicians can work on the system safely while minimizing the risk of electrical incidents, equipment damage, unexpected downtime, and loss of critical loads.

1. Only Qualified Personnel Should Perform UPS Maintenance

UPS maintenance should be performed only by personnel who are appropriately **trained, qualified, and authorized** to work on the specific equipment.

Technicians should understand:

- UPS topology and operating modes
- Electrical hazards and stored energy
- Battery systems and associated risks
- Manufacturer maintenance procedures
- Lockout/tagout requirements
- Emergency procedures

Applicable electrical and workplace safety requirements

A technician should never assume that a UPS is safe simply because it appears to be turned off.

2. Understand the UPS System Before Starting Work

Before beginning maintenance, technicians should review the UPS design and determine how power flows through the system.

This may include:

Utility → Input Switchgear → Rectifier → DC Bus → Inverter → UPS Output → Critical Load

Depending on the installation, the system may also include:

- Static bypass
- Maintenance bypass
- External battery cabinets
- Battery disconnects
- Input/output breakers
- Distribution panels
- Generator connections
- Parallel UPS systems
- Redundant power paths

Understanding these paths is essential because **multiple sources of electrical energy may remain present even when the UPS inverter is switched off.**

3. Follow Lockout/Tagout Procedures

Lockout/tagout (LOTO) is one of the most important safety controls when performing electrical maintenance.

Before working on equipment, qualified personnel should follow the site's approved procedure to:

1. Identify all energy sources.
2. Shut down the equipment according to the

manufacturer's procedure.

3. Isolate the appropriate electrical sources.

4. Apply locks and tags as required.

5. Control stored energy.

6. Verify that the equipment is de-energized.

7. Perform the maintenance only after the safe condition has been established.



Never rely solely on a UPS display, indicator light, or software status to confirm that equipment is de-energized.

4. Verify the Absence of Voltage

One of the most important principles of electrical safety is:

Test before you touch.



After isolation, qualified personnel should use appropriately rated test equipment to verify the absence of hazardous voltage at the points where work will be performed.

The test equipment itself should also be verified according to the applicable safety procedure.

This step is particularly important because UPS

systems can contain **multiple energy sources and stored electrical energy**.

5. Be Aware of Stored Energy

Even after incoming power is disconnected, a UPS may contain stored electrical energy.

Components such as:

- DC bus capacitors
- AC capacitors
- Batteries
- DC links

Internal power electronics

can remain energized for a period of time.

Technicians must follow the manufacturer's specified discharge and waiting procedures before accessing internal components.

Never assume that capacitors or other components are safe to touch immediately after shutdown.

6. Take Battery Safety Seriously

UPS batteries can present significant hazards.

Depending on the battery technology, risks can include:

- High short-circuit current
- Electrical shock
- Arc flash
- Thermal hazards
- Chemical exposure
- Battery leakage
- Fire
- Explosion from accumulated gases in improperly ventilated environments



Before performing battery maintenance, technicians should understand the battery type, configuration, voltage, capacity, isolation method, and manufacturer's safety requirements.

Battery terminals should never be short-circuited with tools or conductive objects.

7. Use Appropriate PPE

Personal protective equipment (PPE) should be selected based on the hazards identified for the specific task and site.

Depending on the work, PPE may include:

- Safety helmet/hard hat
- Safety glasses or face protection
- Electrical-rated gloves
- Protective footwear
- Arc-rated clothing
- Hearing protection
- Other task-specific protective equipment



PPE is an important layer of protection, but it should **not replace proper isolation, engineering controls, and safe work procedures**.

8. Maintain a Safe Work Area

The area surrounding the UPS should be clean, dry, well illuminated, and free of unnecessary equipment or obstacles.

Technicians should also:

- Keep unauthorized personnel away from the work area.
- Maintain required electrical clearances.
- Prevent tools from falling into equipment.

- Keep liquids away from electrical components.
- Use appropriate insulated tools where required.
- Maintain clear access to emergency equipment.
- Good housekeeping can significantly reduce the possibility of accidental contact, short circuits, trips, and other incidents.

9. Be Careful When Working Around Live Equipment

If energized work is permitted under applicable regulations and site procedures, it should only be performed by appropriately qualified personnel using the required controls.

Live electrical work should never be treated as routine.

Before performing any task near energized equipment, technicians should understand:

- Shock hazards
- Arc-flash hazards
- Approach boundaries
- Required PPE
- Equipment ratings
- Safe work procedures
- Emergency response requirements

Where possible, **de-energization** is the preferred approach.

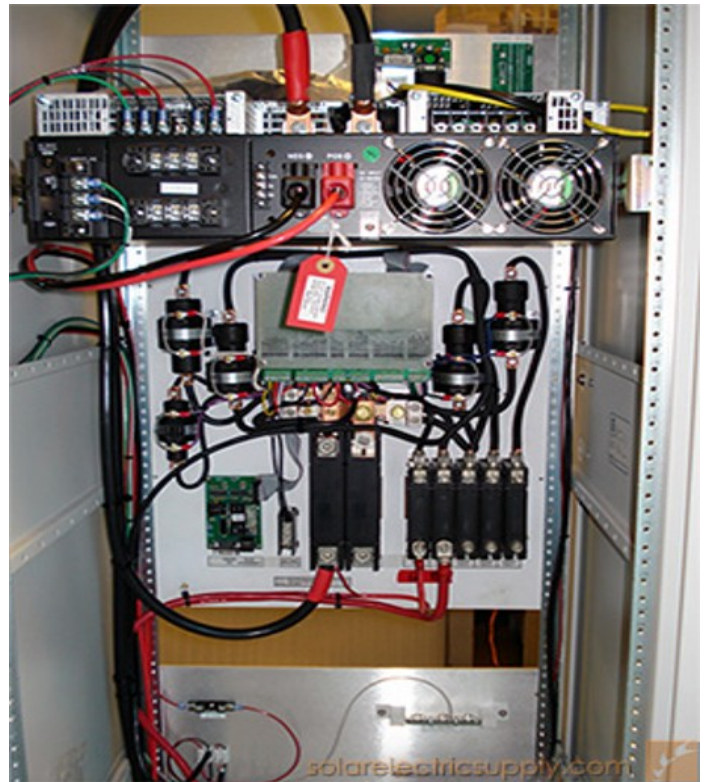
10. Follow the Manufacturer's Maintenance Procedure

Different UPS systems have different architectures, components, shutdown sequences, bypass configurations, and maintenance requirements.

Therefore, technicians should always consult the manufacturer's documentation for the specific UPS model.

Maintenance procedures may include inspection and testing of:

- Fans
- Filters
- Capacitors
- Power modules
- Connections
- Breakers
- Control systems
- Batteries
- Battery connections
- Cooling systems
- Alarms
- Bypass systems



Improvising procedures on a mission-critical UPS can create unnecessary safety and reliability risks.

11. Check the Bypass and Redundancy Configuration

Before maintenance, technicians need to understand whether the critical load is being supplied through:

- UPS inverter

- Static bypass
- Maintenance bypass
- Another parallel UPS
- A redundant power path

Incorrect bypass operation can create serious consequences, including **unexpected loss of power to the critical load**.

For redundant UPS systems, the maintenance plan should clearly identify which equipment can be safely isolated while maintaining the required level of availability.

12. Inspect Connections and Signs of Failure

During maintenance, technicians should look for evidence of abnormal conditions, including:

- Discoloration
- Burn marks
- Overheated connections
- Loose terminals
- Swollen batteries
- Corrosion
- Battery leakage
- Damaged insulation
- Unusual odors
- Excessive dust
- Abnormal fan operation
- Alarm history
- Excessive temperature

Early identification of these conditions can help prevent a small problem from becoming a major UPS failure.

13. Test the UPS Before Returning It to Service

Maintenance is not complete simply because components have been inspected.

Before returning a UPS to normal operation, technicians should follow the approved commissioning or return-to-service procedure.

Depending on the system, this may include verification of:

- Input voltage
- Output voltage
- Frequency
- Battery condition
- Alarms
- Bypass operation
- Load transfer
- Communications
- Cooling
- Operating status
- Redundancy configuration

The final objective is not only to confirm that the UPS starts—it is to confirm that the **UPS and its associated power infrastructure are ready to support the critical load reliably**.

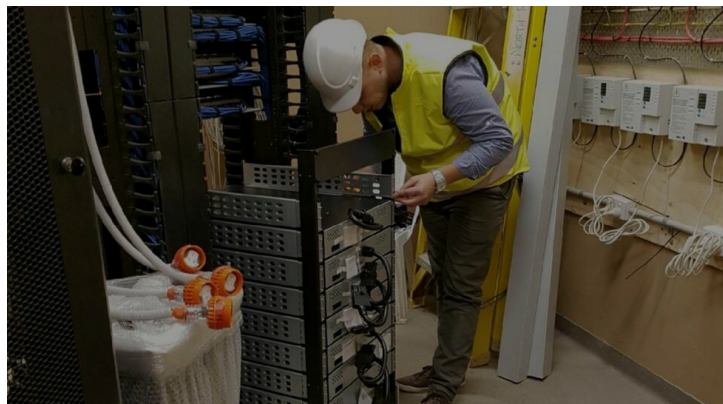
14. Document the Maintenance

A professional UPS maintenance program should include detailed documentation.

Records should identify:

- Date of service
- UPS model and capacity
- Battery configuration
- Measurements
- Alarm history
- Components inspected
- Components replaced
- Test results
- Identified deficiencies
- Recommended corrective actions
- Next maintenance requirements

Good documentation creates a valuable historical



record that can help engineers identify trends and anticipate future failures.

Safety and Reliability Must Work Together

UPS maintenance is both a **safety activity** and a **reliability activity**.

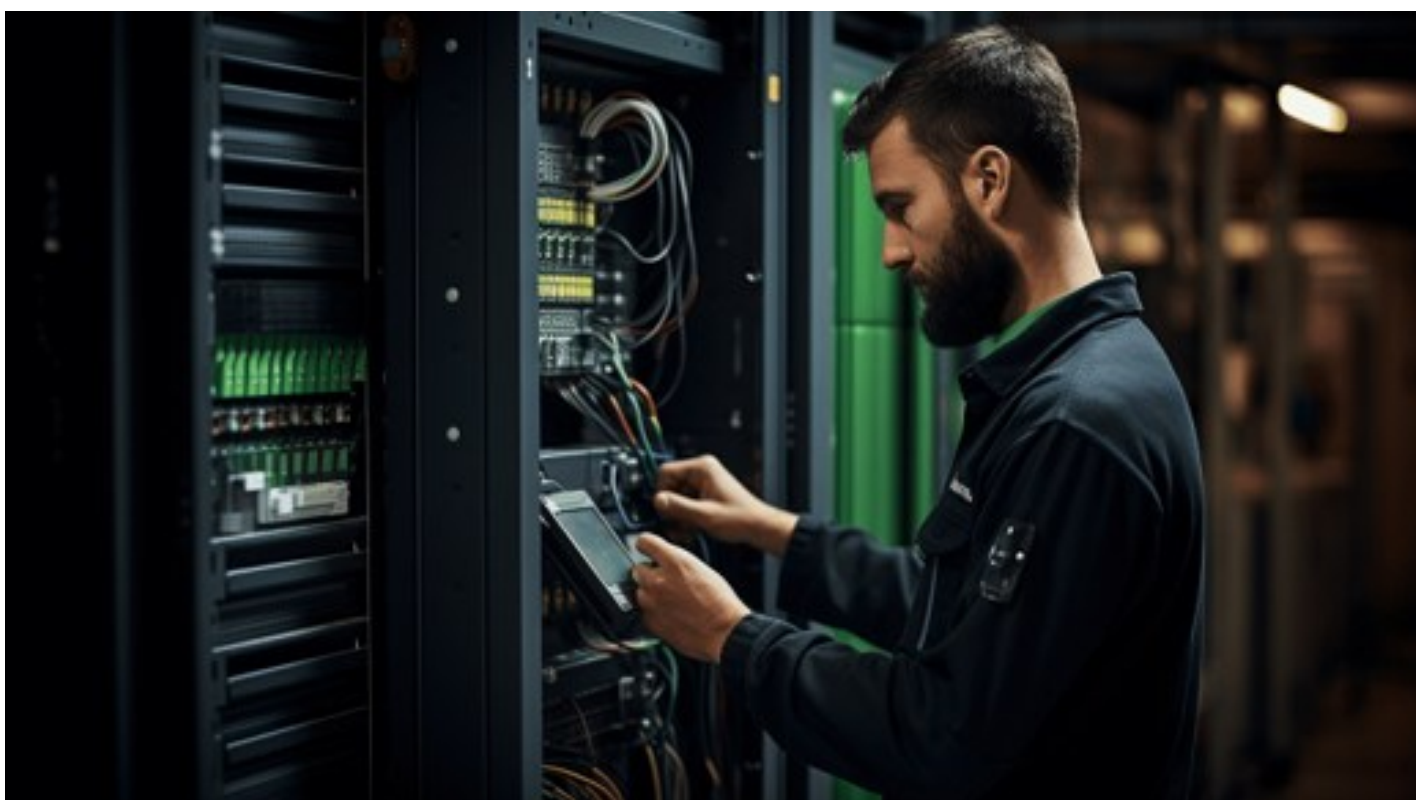
A technically correct maintenance procedure can still create unnecessary risk if electrical hazards are not properly controlled. Similarly, an overly cautious approach that ignores the operational requirements of the critical load can create unnecessary downtime.

The strongest UPS maintenance programs

consulting, project design, system sales, maintenance, servicing, training, and power-quality solutions for mission-critical applications.

Our services can support organizations with:

- **UPS system consulting and engineering**
- **UPS maintenance and servicing**
- **UPS installation and project support**
- **UPS battery maintenance and replacement**
- **UPS system assessment and troubleshooting**
- **UPS redundancy and high-availability planning**
- **Power quality assessment**
- **Harmonic analysis and mitigation**
- **Active Harmonic Filter solutions**



therefore combine:

Electrical Safety + Qualified Personnel + Proper Procedures + Preventive Maintenance + Testing + Documentation

This approach helps organizations protect personnel while improving the availability and reliability of their critical power infrastructure.

What Hatch Power Does

Hatch Power provides professional UPS

• **UPS and power-quality training**

Hatch Power's approach is focused on helping customers make **safe, technically sound, and reliability-focused decisions** throughout the lifecycle of their UPS and critical power systems.

For mission-critical power, safe maintenance is not optional—it is an essential part of system reliability.

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Predicting Lube Life

Heat and Contaminants are the Biggest Enemies of Bearing Grease and Oil

Unless bearings come prelubricated and sealed from the factory, they will periodically need a change of lubricant. How often depends on operating conditions and lubricant type. Bearing lubricants are generally divided into synthetic and mineral-based oils and greases. A synthetic grease will be comprised of a synthetic oil lubricant thickened with either a metallic soap or a nonsoap thickening system.



Mineral lubricating oils deteriorate when they oxidize or react chemically with dissolved atmospheric oxygen. This raises oil acidity and encourages varnish like surface deposits, both of which can shorten bearing life. Lubricant makers add oxidation inhibitors to help break down hydroperoxides that form during the initial oxidation step.

Additives extend oil life by interrupting oxidation chain reactions and by deactivating any catalytic metal surfaces touching the oil. Oxidation-inhibiting additives are slowly consumed during the initial oxidation period. Adding more inhibitor within this time frame lengthens the induction period and delays

acceleration of oxidation reactions.

Synthetic lubricants (Figure 1) generally last longer at elevated temperatures than their mineral-oil counterparts.

Life Expectancy of Inhibited Synthetic Lubricating Oils in Air

Some types have special low-temperature and low-flammability properties. However, hydrolysis or the tendency to absorb water - even from exposure to atmospheric humidity - tends to shorten the life of some phosphate, silicate and ester synthetic oils. Avoiding hydrolysis may require special additives, desiccating air filters and filtration with activated alumina or clay-based fuller's earth.



Rate of Change

Elevated temperature is probably the biggest contributor to oil oxidation. The Arrhenius principle (equation) applied to lubricant life suggests that the lifecycle of the lubricant is cut in half for every 10°C increase in temperature. This rule is useful but not exact, because the rate of change increases as the temperature increases.

Assuming no contamination effect, a lubricant's life L (hours) can be calculated if oil operating

temperature T ($^{\circ}\text{C}$) and product type are known:

$$\text{Log } L = k_1 + 4,750/(T+273)$$

depends on oil type.

For example, this equation predicts oil in a turbine bearing at 138°C degrades about 180 times faster than the same oil in a turbine oil reservoir at 71°C .

It is not uncommon for lubrication systems to have several temperature zones. Each of the n zones with oil volume C_n has a deterioration rate of $1/L_n$. Summing the individual contributions:

$$C/L = C_1/L_1 + C_2/L_2 + C_3/L_3 + \dots + C_n/L_n$$

gives the overall deterioration rate for all oil in a system. This could be useful in projecting the end point of a charge of lubricant in a paper machine application where multiple hot spots could be found.

Unfortunately, the above approach assumes no water or other contamination, no adverse catalytic effects from copper and iron surfaces, and no oxidation-inhibitor evaporation, all of which can cut expected oil life. Adjusting the above oil-life calculations with an equipment-dependent factor accounts for these items. Electric motors and hydraulic systems, for example, use a factor of three. In other words, oil life in these systems is about 66 percent shorter than the oil-life equations predict. A factor of two to five works for steam turbines and compressors while a factor of 10 is good for heavy-duty gas turbines.

When to Change the Oil

In all cases, improved bearing life calls for periodic (typically monthly) laboratory checks of oil samples for oxidation, viscosity change and contaminant accumulation. Oil changes should be considered when its acidity rises by 0.2 to 0.3 mg KOH/gm above that for new oil, or when

viscosity changes more than five percent. This is application dependent.

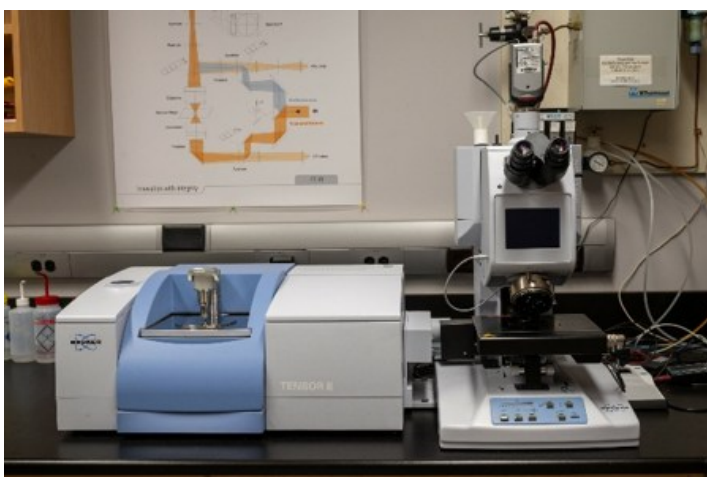
Confirming the Need for a Change

Fortunately, several methods are available to rapidly evaluate oil condition. These include:

- **Electrochemical.** Of numerous electrochemical procedures, cyclic voltametric techniques provide the quickest (less than 10 seconds) and easiest evaluation of remaining antioxidant concentration in lubricants through current-voltage relations at two solid electrodes. Ester aircraft engine oils are first dissolved, or hydrocarbon lubricants suspended, in a solvent containing an electrolyte. As the voltage of one electrode is cycled linearly with time, the voltage at which current flow increases and the magnitude of increase identifies and quantifies, respectively, the antioxidant(s) present in the sample.

- **Microscale oxidation tests.** The rapid Penn State microoxidation test exposes a one-drop sample to a temperature of approximately 250°C to simulate oil oxidation life in automotive and diesel service.

High-pressure differential scanning calorimetry. Once the antioxidants in the lubricant are depleted in the 150°C to 250°C temperature range, exothermic oxidation increases the sample temperature. Oxygen or air pressure is used to reduce sample evaporation. For 170 and 550 psi oxygen pressure, three to five minutes commonly indicates oil is at or near



the end of its useful life.

One test, called Fourier transform infrared spectroscopy, can measure and quantify in less than one minute the extent of oil oxidation by the magnitude, reported in absorbance/mm, of absorption bands in the 1050 to 1250 and 1700 to 1750 cm^{-1} frequency ranges. The amount of remaining oxidation inhibitors is also estimated from absorption peaks associated with discrete infrared wavelengths for individual additives. An oil change or replenishing of oxidation inhibitor is signaled when oxidation-inhibitor concentration drops by half or more from original values.

Alternatively, turbine and other circulating-system oils may use the ASTM D2272 rotating pressure vessel oxidation test (RPVOT). Here, a value below 50 minutes indicates marginal remaining life.

Grease Metrics

As with oil, acidity and antioxidant content are important indicators of the life remaining in grease. But greases contain oil and thickeners, both of which also influence lifespan. Oil content is a measure of remaining life and can be quantified in a grease sample by atomic absorption spectroscopy or by solvent separation and weighing of the remaining oil.

Greases typically fail after losing about half their initial oil content. At this point, bearing friction and noise generally rise along with grease iron content. Further operation can cause severe wear and early bearing failure. Figure 2 indicates that failure is to be expected in 10 percent of greased bearings from this degree of dryness after about 30,000 to 40,000 hours of operation with premium ball bearing greases at moderate speeds, temperatures up to 70°C, and light loads.

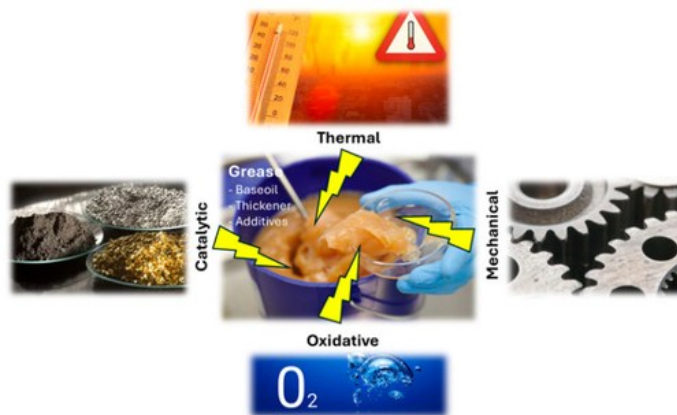
Grease Life at Temperatures up to 70°C Diminishes with Bearing Speed Factor k_f DN

One-half of the initial oil content corresponds to the percentage of soap (thickener), S_f , contained in

a grease at failure:

$$S_f = 100 \times 2S_0 / (100 + S_0)$$

where S_0 = the percent thickener in fresh grease. A fresh grease containing 10 percent soap, for instance, would be expected to fail when it had dried to the extent that S_f = 18 percent.



As a rule, larger bearings and those that run at high speeds shorten grease life. Grease time-to-failure typically halves when bearing rotational speeds reach grease DN (pitch line speed) limits, as measured by:

$$DN = N \times (ID + OD) / 2$$

where ID = bore diameter (mm), OD = outer diameter (mm), N = speed (rpm).

Operation at even higher speeds can trigger early bearing failure, partly because centrifugal force throws grease from cage and raceway surfaces.

Speed reduction factor k_f is yet another indicator of grease life. It is directly proportional to how far grease must travel to feed the width of ball or roller tracks. Higher values (for a given bearing type) apply to those with larger cross sections or higher load capacity and vice versa. Larger speed reduction factors shorten grease life. For reference, conventional single-row, deep-groove ball bearings have a k_f = 1.0 and a DN limit of about 300,000.

Speed effects vary among greases as well. For example, so-called channeling-type greases often used in double-shielded and double-sealed ball bearings probably won't last as long as some other grease types when operating near limiting k_f DN values.

Silicone greases with their low surface tension oils and poorer lubricating properties for steel-on-steel surfaces dictate 35 percent lower DN speed limits. An additional 25 to 50 percent DN reduction is called for when operating bearings on vertical shafts.

Elevated operating temperature is also an enemy of greases. In fact, bearings that operate at temperatures above 70°C cut grease life by a factor of 1.5 for each 10°C rise. Above 150°C, rapid oxidation boosts that factor to 2.0 for each 10°C rise. High temperatures promote oxidation and increase oil evaporation rates and oil loss by creep, all of which accelerate grease drying and shorten life.

Grease life L_G , can be estimated for operating temperatures above 70°C with moderate loads and no contamination by:
 $\log L_G = -2.60 + 2,450 / (T + 273) - 1 \times 10^{-6} k_f \text{DN}$

Here, L_G is time-to-grease-failure for 10 percent of applications using fresh industrial greases of Grade 2 consistency with thickeners such as lithium, complex metal soaps and polyureas.

There are several ways that lubricant lifecycles can be estimated. Calculating lifecycles based on operating conditions requires application of factors to account for real life conditions, such as solid contamination, moisture, air, catalytic effect of wear debris, temperature variations in a circulating system, etc. As the temperature increases, the rate of change increases. The

Arrhenius rule suggests doubling lubricating oil degradation rate for each 10°C increase in temperature. Grease lifecycles are influenced by the noted problems with oil lubricants, bearing design, surface speeds and grease dryness.

GREASE QUANTITY FORMULA

(STANDARD METHOD)

$$Q = 0.005 \times D \times B$$

Q = Grease quantity (grams)

D = Bearing outside diameter (mm)

B = Bearing width (mm)



This gives the initial fill amount. For relubrication, usually 1/3 to 1/2 of the bearing free space is filled to avoid overheating.

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The Arrhenius Equation

Common sense and chemical intuition suggest that the higher the temperature, the faster a given chemical reaction will proceed. Quantitatively, this relationship between the rate at which the reaction proceeds and its temperature is determined by the Arrhenius equation, which relates the log of reaction rate to the reciprocal of absolute temperature. At higher temperatures, the probability increases that two molecules will collide with sufficient kinetic energy to activate a chemical reaction. The activation energy is the amount of energy required to ensure that a reaction happens.

In exponential form, the effect of temperature on reaction rates using the Arrhenius equation becomes:

$$k = A * \exp_a^{(-E_a / R * T)}$$

where k is the rate coefficient, A is a constant characteristic of the reaction, E_a is the activation energy, R is the universal gas constant, and T is the temperature (in degrees Kelvin).

R has the value of $8.314 \times 10^{-3} \text{ kJ mol}^{-1} \text{ K}^{-1}$.



Advice for Using Grease Guns



In order to move grease to the application point, it needs to be pumped. Most delivery systems for oil utilize pumps that work in the 50 psi (2.3 bar) to 250 psi (17.2 bar) range. Grease, on the other hand, requires a pump that will deliver pressure above 1500 psi (103 bar).

In the hands of an untrained operator, an ordinary grease gun can deliver a pressure of up to 15,000 psi (1030 bar)! A bearing seal, on the other hand, will rarely rate higher than 500 psi (35 bar). Once the seal on the bearing is compromised, the bearing is well on its way to early failure. A compromised bearing seal encourages dirt ingestion and overlubrication due to its lack of "back pressure" (this is especially true when greasing a bearing "blind" from a remote zerk fitting). The secondary negative effects produced are extra consumption of grease and extra time required for cleanup of equipment with the overflowed grease, inviting dirt and contaminants to stick to it. Respect the power of a lowly manual grease gun.

Maintenance Tip: Always ensure that the dispensing nozzle of the grease or oil gun is cleaned before use, and that the fitting it is attached to is also clean. This will safeguard against unnecessary introduction of dirt into the bearing.



ALBERTA CHIEF POWER ENGINEERS EDUCATION CONFERENCE (ACPEEC)



The Alberta Chief Power Engineers Education Conference Committee have been working diligently to prepare for the **2026 ACPEEC Conference on October 28th at the Renaissance Hotel located at the Edmonton Airport.**

We will once again have a full day of presenters, Government and Regulatory representatives and a trade show for the development of our trade as we move towards the future.

The Chief Power Engineers meeting will be on the Tuesday afternoon before, along with the social event at the same location as the conference. **Registration is available on the <https://acpeec.ca/>**, along with a availability for highly discounted hotel rooms at the Renaissance Hotel until the end of September.

We look forward to seeing you at this exciting event!

IMPORT UPDATE:

LOCKBOX PROGRAM



Honeywell has discontinued the TRACcess (Supra) lockbox product line along with all support and services. Because this change comes directly from the manufacturer, any Supra lockbox lids currently installed on business premises will need to be replaced or retrofitted to remain compliant with the National Fire Code.

To maintain secure emergency access and code compliance, all existing Supra lockbox lids must be retrofitted with the approved Knox Lift-Off Retro Lid before **December 31, 2026**. Orders should be placed through the Knox website before **October 30, 2026**, and installations must be completed by CFD. Non-compliance fees will apply after the deadline.

We've also implemented several cost-saving measures for businesses, including removing third-party lockbox inspection requirements, waiving key-add fees during retrofit, and eliminating the need for locksmith/provider contracts.

If you're able to distribute the notice below to your members, it would be extremely helpful in ensuring building operators are aware of these requirements and timelines.

If anyone has questions or needs clarification, they can visit calgary.ca/lockboxes or contact lockbox@calgary.ca.

Best regards,

Michael Garner

Fire Inspections Coordinator

Calgary Fire Department

Beyond the Boiler Room: Why Being "The Boss" is Your Biggest Liability

[Juan Carlos LaGuardia Merchán](#)

I remember my first major plant overhaul. We were forty-eight hours into a critical chiller replacement, the humidity in the building was creeping up, and the client was rightfully getting twitchy. I was young, stressed, and leaning heavily on my clipboard.

I thought that by barking orders and reminding everyone that *I* was the one accountable for the SLA, I was "leading."

I wasn't. I was just being loud.

The team did exactly what I asked, but nothing more. They saw a pipe leak that wasn't on my specific checklist and let it sit. Why? Because I hadn't earned their eyes; I'd only demanded their hands. That's the trap many of us in Facility Management fall into. We get so bogged down in the M&E schedules, the FM software, and the bottom line that we forget that buildings are kept alive by people.

The Fragility of Fear

In our industry, fear is a tempting shortcut. If a technician is afraid of a reprimand, they'll show up on time. They'll tick the boxes on the PPM (Planned Preventive Maintenance). They'll follow the SOP to the letter. But fear is an expensive fuel; it burns out quickly and leaves a residue of resentment.



When you lead through fear, you create a culture of "not my job." In a complex building environment where a single misaligned valve or a missed sensor alert can lead to a catastrophic failure, you cannot afford a team that only does what they are told. You need a team that does what is *necessary*.

Obedience is transactional. It lasts as long as the supervisor is watching. Loyalty, however, is a different beast entirely. It's what happens at 3:00 AM on a Sunday when a water main bursts and your lead engineer heads to the site before you've even had a chance to call them. They aren't doing it because they're afraid of the "boss." They're doing it because they value the operation and, crucially, they value the relationship you've built.

The Power of Being "The Person Nobody Wants to Deceive"

There is a subtle, profound shift when you stop trying to be the most important person in the

room and start being the person your team genuinely respects. It's the difference between being a manager and being a mentor.

When your team respects you, they develop



a sense of ownership that no KPI can ever measure. They don't want to let you down because they know you've got their back. They know that if the HVAC system fails despite their best efforts, you won't be looking for a scapegoat; you'll be looking for a solution.

Think of it like a perfectly balanced building system. When every component the pumps, the chillers, the fans is working in harmony, the efficiency is staggering. But that harmony requires trust. If the pump "fears" the controller, the system is rigid. If they work in sync, the system is resilient.

Creating the Culture of Integrity

So, how do we move away from the "boss" persona? It starts with the "dirty hands" philosophy. I'm not saying you need to be crawling through ductwork every day, but you must understand the grit of the job. You have to be willing to stand in the rain with your ground crew or stay late with the cleaning supervisor when a spill turns into a crisis.

Professionalism in FM isn't about the suit; it's about the standard. If you expect your contractors to be meticulous with their RAMS (Risk Assessment and Method Statements), you must be meticulous with your feedback. If you want your team to be honest about a mistake, say, a botched refrigerant recovery you must create a space where honesty isn't met with a hammer, but with a handshake and a "how do we fix this together?"

The Ripple Effect on Building Operations

When you lead with this kind of integrity, the operational benefits are tangible.

- **Reduced Attrition:** We all know how hard it is to find good MEP engineers right now. People don't leave buildings; they leave bad leaders.
- **Proactive Innovation:** A technician who feels respected is far more likely to suggest a tweak to the lighting schedule that saves the client 15% on their energy bill.
- **Swift Recovery:** During a "black start" or a major power outage, a loyal team moves with a synchronicity that fear-driven teams simply cannot replicate.
-

Final Thoughts from the Plant Room

We aren't just managing square footage. We

are managing the environments where people live, work, and innovate. Our leadership should reflect that responsibility.

The most successful Facility Managers I know aren't the ones with the loudest voices or the most intimidating presence. They are the ones who walk the halls, know their team's names, understand their challenges, and lead by an example so consistent that the team feels a personal stake in the building's success.

Don't strive to be the boss who is obeyed. Strive to be the leader who is followed because your team believes in the mission and in you. Because at the end of the day, when the lights are dimmed and the last tenant has left, it's the loyalty of your people that keeps the building standing. The transition from "boss" to

"leader" is a career-long journey with plenty of lessons learned the hard way. Have you ever had a mentor who changed your perspective on management? Or perhaps you've seen how a shift in culture transformed a struggling site?

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Elevator Safety

There are about 600,000 elevators in the United States. Every once in awhile, you get in a car that shudders, misses the next floor, or suddenly speeds up or slows down. It makes you wonder - *Should I trust this contraption?* "Statistically, it's a safe ride," say Ray Lapierre, executive director of the Elevator Escalator Safety Foundation. Out of an estimated 120 billion rides per year, about 10,000 people end up in the emergency room because of elevator-related accidents. Their injuries are most often caused by tripping or being hit by closing doors. In some cases, accidents have occurred when the doors opened onto an empty shaft. As for the odds of getting stuck in an elevator. They're about once in a lifetime for the average person using elevators on a daily basis. Still nervous? Here, answers to common questions about elevators misbehavior.

How do I know if an elevator is safe?

The vast majority of states and cities abide by the A17.1 Safety Code for Elevators, which calls for a minimum of semi-annual inspections by certified elevator inspectors. A certificate listing the last date of inspection should be hung in each elevator (or it should be available in the superintendent's office); if you don't see one, or if you notice that the date listed is more than six months old, contact the building's superintendent, or notify your local elevator inspection bureau and take the stairs.



Could the cable snap and send an elevator plummeting down the shaft?

This is every rider's worst fear, but experts say there's no need to worry. You're being supported by four to eight cables, each of which could support the weight of the car by itself. In fact, the only time an elevator has been known to go into freefall - with all of its cables cuts - was during World War II, when an American bomber accidentally hit the Empire State Building. The plane's crew died, but the lone elevator passenger survived.

If the car bounces, is that bad?

Hydraulic elevators, used in buildings of two to five stories, move when oil is pumped through a cylinder. lifting the cars up or letting them down the same way they're raised and lowered in an auto-body shop. Older elevators may jerk when the oil hasn't warmed up enough (usually early in the morning). While a less-than-smooth ride can be nerve-racking, it's not a safety concern. Traction elevators - in buildings with six stories or more - use an electric motor, counterweight, and pulley to move the car. They might bounce because of poor brake

adjustment. “This occurs with normal wear and tear,” says David Afmuth, vice president of National Elevator Inspection Services, “but it doesn't pose an immediate danger to riders.” You should however, tell your building superintendent so that the brakes can be adjusted to prevent more serious problems in the future.

Am I in danger if it suddenly seems to speed up?

Traction elevators may briefly accelerate during power surges or when the pulleys are worn (something inspectors look for when checking elevators). Sounds scary, but there are several back-ups in place. If the car moves beyond a certain speed, an electric switch automatically shuts off the elevator. If that doesn't work, “safeties” (mechanical devices attached to the bottom of the car) automatically apply brakes to the side rails and bring the car to a halt.

What about when it moves too slowly?

This is a probably caused by dirt or wear on acceleration switches located in the building's control room. Though a sluggish ride can be annoying, lack of pick-up doesn't mean, however, that the elevator needs tending to, so inform your building superintendent.

Should I get in an elevator that isn't level with the floor?

“If an elevator arrives empty and is uneven with the floor, it needs mechanical adjusting,” says Afmuth. “But it's no more likely to get stuck or crash.”

An older car that's crowded with people may sink slightly below floor level due to the extra weight (newer elevators are equipped

with load-weighting equipment that will automatically prevent the doors from closing). While elevators are designed to carry more than the maximum weight posted, if the car's over-crowded, it's a good idea to wait for the next one.

Tips for the trapped:

- o Don't panic. Take a few deep breaths and remind yourself that there's plenty of oxygen in the car. Then do whatever makes you feel comfortable - hum your favorite tunes, do stretching exercises, read any books or magazines you may have with you.
- o Contact the outside world. Every elevator should have an alarm button and intercom or phone. In large buildings, an on-site custodian should respond to your call within five minutes.
- o Sit down. Some people have fallen when the elevator suddenly restarted.
- o Don't worry about being in the dark. Lighting runs on a separate circuit. Even if it does go out, there is a back-up system that would kick in for up to four hours.
- o Stay put. Never attempt to pry open the doors or crawl out of the opening on the roof of the car. The elevator could start moving again - with fatal results. Wait until a qualified mechanic or rescue personnel come to your aid.

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People Before Pipes: Why Human Resource Challenges Are Now the Hardest Part of Building Operations

[Juan Carlos LaGuardia Merchán](#)



If you ask most people what a Facility Manager does, they'll likely mention maintenance schedules, energy efficiency, and keeping buildings running. But speak to any seasoned facility manager in Europe or North America, and they'll tell you that the greatest challenges today aren't mechanical; **THEY'RE HUMAN.**

The role of **building operators** has evolved dramatically in the last decade. With rising demands for smart buildings, regulatory compliance, and 24/7 uptime, the pressure on these frontline professionals is mounting. And with that, **HR challenges have become central to the success of FM operations.**

Let's explore the **top 10 human resource issues that Facility Managers must navigate**, issues that not only impact operational efficiency but can make or break the long-term sustainability of our teams.

Shortage of Skilled Technical Talent

In both Europe and North America, the demand for HVAC technicians, automation specialists, and multi-skilled building operators has outpaced supply. Fewer young people are entering the trades, and those who do often gravitate towards higher-paying construction or tech industries.

The result? Vacancies remain open for months, and remaining staff face increased

workloads, further compounding stress and burnout.



High Staff Turnover Rates

Turnover in the building operations sector is alarmingly high. Some technicians leave within 18 months, often citing a lack of progression, poor management, or non-competitive pay.

For Facility Managers, this means constant recruitment cycles, onboarding costs, and the erosion of institutional knowledge, all of which affect service reliability.

Weak Soft Skills Across Teams

While technical proficiency is critical, soft skills are often the silent differentiator. Unfortunately, many building operators struggle with effective communication, team collaboration, and customer interaction.

In high-stakes environments like hospitals or data centres, this gap can become a risk. Managers must prioritise emotional intelligence alongside hard skills in training plans.

Lack of Continuous Training and Upskilling

Smart systems, IoT integration, and energy analytics, today's operators must manage far more than just boilers and chillers. Yet many organisations fail to invest in regular, structured upskilling.

Without this, building operators quickly become overwhelmed, demotivated, and operationally obsolete.

Undefined Performance Metrics

Evaluating a building operator's performance goes beyond reactive task completion. It requires real KPI's uptime, energy targets met, number of proactive interventions, but few FM teams have these clearly defined.

Without robust metrics, recognition and development become subjective, leading to frustration and disengagement.

Shift Work Fatigue and Burnout

Rotating shifts, emergency call-outs, and after-hours work are part and parcel of building operations. But without proper rota planning and wellbeing support, these demands lead to chronic fatigue and health issues.

Many operators report **feeling undervalued and physically drained**, especially in mission-critical facilities like laboratories or data centres.

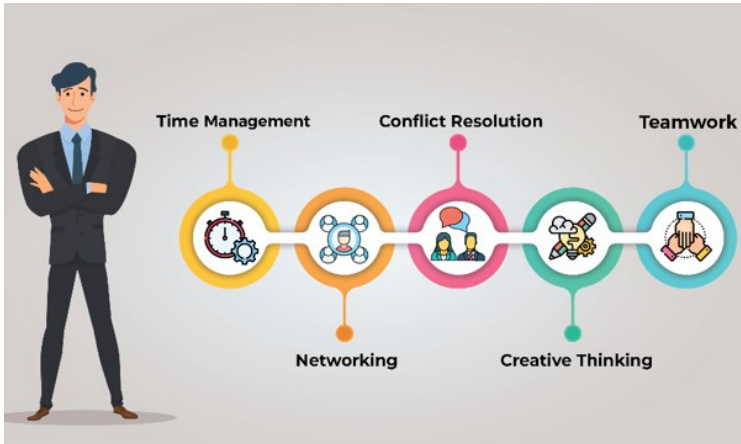
Ageing Workforce Without Succession Plans

A significant portion of the workforce in facilities management is aged 50 and above. While their experience is invaluable, retirements are imminent, and few organisations have structured mentorship or succession strategies in place.

The looming skills vacuum is a serious threat.

Multicultural Team Integration Challenges

Many building teams today are wonderfully diverse, but that can bring language barriers, conflicting work styles, and cultural misunderstandings.



Facility Managers must become cultural translators and facilitators, building bridges between team members to avoid conflict and promote psychological safety.

Lack of Career Visibility and Growth Paths

For many junior operators, it's hard to see what's next. There's little transparency on how to grow into a senior technician or team lead, let alone an FM role.

Without a clear ladder, employees lose motivation or, worse, they leave the industry altogether.

Non-Compliance with Regulatory Standards

Whether it's ISO 41001, EN standards, or OSHA guidelines, compliance is now part of an operator's daily reality. But without regular training and enforcement, many unknowingly operate outside of protocol, putting the business at risk.

The Facility Manager's role includes **not just enforcing compliance, but embedding it**

culturally across the team.

So What Can Facility Managers Do?

It's time to acknowledge that **our people are our primary assets, not the buildings themselves**. As FM leaders, we must:

- Collaborate closely with HR to develop tailored retention strategies
- Advocate for budget allocation to support continuous training
- Promote a culture of respect, mental health, and recognition
- Develop clear progression frameworks within the technical team
- Embrace leadership as a people-centric function, not just an operational one



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KenKen Puzzle

How to solve the KenKen puzzle:

(Answers on page 34)

- Fill in the numbers from 1–6
- Do not repeat the 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 in the same row or column

9		3				4		
		1	5	6		7		9
	6			9	8	2		5
2	8			4			7	6
			2		9	5	8	
4	7			3	6			
	4			5	7	6		3
6	3					9		1
5		2	6	1				



30
DAYS IN THE
MONTH



Chinese Moon
Festival



National Talk Like
a Pirate Day



Patriot
Day



Aster
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Flowers



SEPTEMBER

FUN FACTS



National
Potato Day



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Summer > Hello
Fall



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Questions? Email Lloyd Suchet at lloyd.suchet@boma.ca for more details.

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TEST YOUR OPERATOR IQ ANSWERS

Answers: 1)c 2)e 3)a 4)c 5)a 6)d



Kenken Puzzle Answer

9	5	3	7	2	1	4	6	8
8	2	1	5	6	4	7	3	9
7	6	4	3	9	8	2	1	5
2	8	9	1	4	5	3	7	6
3	1	6	2	7	9	5	8	4
4	7	5	8	3	6	1	9	2
1	4	8	9	5	7	6	2	3
6	3	7	4	8	2	9	5	1
5	9	2	6	1	3	8	4	7

Just for laughs!



**Why did the apple pie
go to the dentist?**

Because it needed
a filling.



**Why shouldn't
you tell a secret in
a cornfield?**

Because the
corn has ears.



**Why did the apple
stop in the middle of
the road?**

It ran out of juice.

JOIN US:
TUESDAY SEPTEMBER 8, 2026 AT 5PM FOR
OUR MONTHLY MEETING

TITLE: **What is the role of a Building
Operator? What skill sets are
required to fulfill that role?**

PRESENTER: **Les Anderson**
President of BOA Calgary Chapter

LOCATION:
Thorncliffe Greenview Community
Association & Recreation Centre Boardroom
5600 Centre St N, Calgary, AB T2K 0T3

PRESENTATION EXTRACT:

The questions are easy. The answers may vary depending on what building type you are operating and the type of operations team you are a part of, however the fundamentals likely remain the same.

Our discussion will uncover what some those core competencies might be. How individuals or organizations can work towards achieving operational success while enhancing those fundamental skill sets on a continual basis.



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