RISKS IN THE CONSTRUCTION INDUSTRY...

AND HOW TO PROTECT YOURSELF AGAINST THEM

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Insurance

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INTRODUCTION

While fire and water damage remain top risks in construction, there are many more—from slips and falls to cyberattacks to equipment theft. There are also obstacles one may not expect, like being forced to shut down during a global pandemic.

Whether working in residential, commercial, institutional, or infrastructure construction, the risks vary in size and complexity, and they can evolve throughout a project. Risk management, as well as proper policies and procedures, can help to avoid many of these risks, hazards, and accidents. But if the worst-case scenario does occur, having the right coverage—along with the right documentation—can make the claims process much smoother.

According to Northbridge Insurance's internal claims data, the top loss causes for property in 2019 were water, fire, and theft—the same top three as in 2018. The average severity of water damage was $129,000, while average fire damage was $169,000 and average theft was $23,000. But these are only averages; the highest claim for water damage in 2019, for example, was over $1.5 million.

To help those in the construction industry avoid costly claims when possible, this whitepaper covers some of the biggest risks they may face and how to mitigate those risks to keep employees safe and keep the project running on time and on budget.

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INFECTION CONTROL

While COVID-19 has made it impossible to conduct business as usual, construction firms and contractors can follow best practices and protocols—from physical distancing to expanded use of personal protective equipment—to keep workers safe and ensure business continuity.

Some provincial and municipal public health authorities are rolling out their own measures, so construction firms and contractors must ensure they're compliant with the specific rules in their province and/or municipality.

The Canadian Construction Association has come up with standardized protocols for all construction sites, meant to keep workers safe through prevention, detection, and response to COVID-19. These protocols are designed to minimize impacts by:

- Prioritizing the health and safety of workers and their surrounding communities
- Applying recommendations and best practices from federal, provincial, and municipal public health authorities to construction site procedures
- Establishing and maintaining a common COVID-19 Pandemic Response Plan across construction sites

Prevention Measures

All workers should follow recommended practices identified by Health Canada, the Public Health Agency of Canada, and Centers for Disease Control and Prevention. These practices should be posted on the job site, along with any relevant updates.

Recommended practices include: avoiding touching your mouth, nose, or eyes; coughing or sneezing into a tissue or the bend of your arm (and disposing of the tissue immediately); and using face coverings to minimize transmission. Reusable personal protective equipment (PPE) should not be shared among workers and should be cleaned and disinfected after use.

Communicate the importance of handwashing and how to do it properly. Workers should wash their hands often with soap and water for at least 20 seconds, particularly after using the washroom, before handling food, and before smoking. If soap and water are unavailable, provide alcohol-based hand sanitizer.

All job sites should use additional cleaning measures in common areas, including door handles, railings, ladders, switches, controls, taps, toilets, eating surfaces, shared tools and equipment, and commonly touched surfaces in shared vehicles. These should be wiped down at least twice a day (or between users or shifts) with a disinfectant.

Wherever possible, the job site should be segregated into zones to keep different crews or trades physically separated. Place limits on the number of people allowed in each zone. For work that must be done in close proximity, outline formal procedures and required PPE to minimize risk. Also, identify designated delivery zones where shipments and deliveries can be dropped off, avoiding personal contact, if possible.

Be sure to regularly communicate policies to workers, post signage (with relevant updates), and track workers' status both on-site and off-site. A list of all quarantined workers should be updated daily (with privacy maintained).

Detection Measures and Response

Before entering the job site, workers must confirm they're not currently exhibiting flu-like symptoms such as fever, tiredness, coughing, or congestion, and that they haven't been in contact with someone (to the best of their knowledge) with a confirmed or probable case of COVID-19.

The symptoms of COVID-19 are similar to other illnesses, including the cold and flu. Any worker who has these symptoms should complete an online self-assessment, call their provincial public health authority, or contact their family physician.

Workers who may have been exposed to the virus, or who are exhibiting flu-like symptoms, should be instructed to stay home and self-isolate, contact their supervisor or HR department, and contact local health authorities for further direction.

Tracking and Monitoring

Because of the latency period of COVID-19, construction firms and contractors should track where their employees have worked. If an employee tests positive for the virus, the employer will be asked to provide information to local health authorities on where the employee worked and which other employees may have been exposed.

If a worker tests positive for COVID-19 due to exposure at the workplace, or a claim has been filed with your provincial occupational health and safety agency, the employer is required to notify the Ministry of Labour, Training and Skills Development in writing within four days. If applicable, the employer may also be required to contact a health and safety representative of the worker's trade union.

Wherever possible, the job site should be segregated into zones to keep different crews or trades physically separated. Place limits on the number of people allowed in each zone.

-03- FIRE

Fire is a common risk for construction firms, since their operations require hot works, open flames (heating units), and combustible products. It doesn't take long for a small fire to grow into a devastating blaze that can wipe out an entire operation. Recovering from this takes time and money, since a major cleanup and restoration can take weeks or even months.

In 2018, for example, of Northbridge Insurance's large losses over $1 million the top loss cause was fire. Causes included everything from careless work by the builder to careless smoking by workers.

"One of the biggest hazards we run into is smoking," says Fred Muldowney-Brooks, Vice President of Risk Services at Northbridge Insurance. "It's a simple hazard, but it's one of the costliest hazards out there—and easily preventable."

There are plenty of other fire hazards on the commercial side. Welding, torching, grinding, and even equipment related fires—as well as bringing flammable materials on-site—all need to be controlled. All hazards still apply on the residential side, whether working on a subdivision, a townhouse complex, or a detached home. "But the aspect of a building schedule becomes extremely important. Think about planning your project to limit the potential for fire," says Muldowney-Brooks.

Fire Prevention and Control

Effective fire prevention and control should be used to establish a solid defence in the event that a fire does occur. In addition to local regulations, there are several fire prevention features that should be considered on any job site.

Ultimate responsibility for fire protection should remain with the site engineer (even if daily supervision is delegated) and the entire site should be patrolled at least once per shift. Create an emergency plan that shows each person's responsibility in the event of a fire and, if necessary, make it available in several languages. A watchman or remote surveillance service should be provided for the site at night and on weekends.

- Temporary buildings such as offices, restrooms, and material stores should be made of non-combustible materials (or materials of limited combustibility) and adequate distances should be kept between temporary buildings.
- Material and equipment stored in sheds or in the open air should be subdivided into fire sections with a value. Combustible material should be marked clearly and stored separately.
- Fire breaks between buildings, as well as fire walls within buildings, should be considered in the design stage and construction schedule. Fire doors with quick release mechanisms and emergency lighting should be installed as early as possible during the project.
- Portable fire extinguishers and fire hoses should be made available on-site and regularly tested. A water supply for firefighting purposes, such as hydrants, pumps, tanks, and reservoirs, should be provided at the beginning of the construction period. This can be accomplished with either a temporary system or by the early completion of the permanent system.

No Smoking Policy

Establish a no smoking policy. Post "No Smoking" signs and enforce the policy on the job site, particularly in the vicinity of hazardous operations. If you do permit smoking off-site, create a designated smoking area away from combustible materials and ensure there are fire-safe ashtrays available.

Temporary Heaters

Special attention should be paid to temporary heaters, which are commonly used for ground thawing, concrete curing, or general drying purposes. Improperly installed temporary heaters are often the cause of major fire losses on construction sites.

The most common fire hazard related to temporary heating is lack of proper clearance when the unit is installed. Radiant heaters are common on construction sites; these self-contained portable units are typically unvented and use LPG propane/natural gas or liquid fuel. The heat radiating from these types of units is intense and commonly requires at least eight feet clearance. LPG tanks should be stored outside of the building and chained or secured to avoid tipping over.

Temporary heaters should be installed and operated according to the manufacturer's instructions. Each heater has a data plate indicating the necessary clearances to combustibles, ventilation requirements, and fuel type, so be sure to adhere to those specifications. Multi-purpose fire extinguishers (minimum 4A:40B:C) should be provided wherever temporary heaters are used.

Alternatives to Temporary Heating

Using alternative solutions to temporary heating will significantly reduce your risk of fire. If possible, a building's permanent heat source should be used. Heating units that pipe hot water into a building and distribute heat through various methods are another safe alternative to an open flame heater, although the heater should be located in a safe location outside of the building.

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Fred Muldowney-Brooks,
Vice President of Risk Services
at Northbridge Insurance

Hot Work

Hot work is defined as any process that uses or generates open flames, sparks, or heat, such as welding, cutting, grinding, or brazing—and it represents an extremely high fire risk. It has the potential to cause major losses both at your facilities, as well as on the sites where hot work is carried out by contractors.

Fire and explosions typically occur because of negligence, improper training (or lack of training), and absence or non-adherence to strict hot work safety guidelines and protocols. All of these are controllable, as they result from human error. Loss prevention practices—such as proper site assessment and preparation, employee training, safety equipment such as heat shields, and adequate controls—all contribute to managing the risks associated with hot work.

Risks Associated with Hot Work
Open flame work such as welding and cutting requires a great deal of caution. Operations such as grinding, thermal spraying, roofing membrane application, and frozen pipe thawing are other examples of risks associated with hot work.

Potential fire scenarios include welding and cutting of metal performed in open areas or near pits, in proximity to combustible materials. Sparks and hot slag generated by hot work processes can end up on floors, ceilings, walls, and other elevated surfaces or get lodged into hidden cracks and crevices.

Sparks and hot slag can also travel great distances and have the potential to ignite any combustible material in their radius—horizontally and vertically. Be cautious within a minimum radius distance of 15 metres; all combustible materials lying in the vicinity should be removed or covered.

Creating a Hot Work Management Program
A hot work management program establishes safety protocols aimed at identifying hot work hazards and controlling their associated risks. It should include policies (where hot work is permitted and by whom), procedures (how to prepare for hot work and which tools are approved for use), the assignment of responsibilities, and accountability for all aspects of hot work, as well as training and communications.

Fire extinguishing equipment should be maintained in a state of readiness within immediate reach of workers and be appropriate to the potential fire or explosion hazard. This could include portable fire extinguishers, a fire hose, pails of water, or buckets of sand, depending on the nature and quantity of the combustible material exposed. Workers should also be trained in the proper use of the fire extinguishing equipment.

For contractors performing hot work at a client's site, check if they have their own hot work management program and adhere to it strictly, including any permit system that's in place. Obtain your client's approval and sign-off, and document all your procedures and actions. Also check with your insurance broker for any limitations associated with liability coverage pertaining to hot work.

Tips for Hot Work Management:

- Survey the hot work area and remove or protect combustible material.
- Use thermal barriers (such as a ceramic flame guard) to protect combustible material that can't be removed.
- Have a multi-purpose ABC fire extinguisher nearby at all times, with a minimum rating of 4A:40B:C.
- Conduct a fire watch for at least 60 minutes after finishing hot work and follow the CSA standard (CSA W117.2-12) for hot works.

Waste and Debris Removal

A clean job site is important for the safety of workers and the public, since combustible materials—even long grass and weeds—can become a fire hazard. Collect debris in a secure area away from buildings to reduce the risk of fire, including arson.

Debris should be removed from the site on a regular basis; container services can be used for larger projects. Chutes or other approved devices should be provided for waste removal from above-grade floors.

Oil and Solvent-Soaked Material

Spontaneous combustion is not just a myth, it's actually a molecular breakdown of flammable material. As the material breaks down, it generates heat. It is this heat that ignites and sets combustible materials (such as rags or cardboard) on fire. All oil-soaked or paint/stain/solvent-saturated rags and clothing should be placed into metal safety containers with self-closing covers. The containers should be clearly labelled and stored away from combustible materials, surfaces, or walls. Regularly inspect containers for damage and replace them when necessary. If you are disposing of oil and solvent-soaked material, be sure to empty the containers at the end of the work day to reduce the chance of spontaneous combustion.

Flammable and Combustible Liquids Storage

Store flammable and combustible liquids in approved safety containers at a secure location away from other combustible materials. Use only approved storage cabinets to store containers. Try to limit the quantities of flammable and combustible liquids on-site and consider using a separate storage and mixing room if you store more than 22 litres of flammable and combustible liquid. Fuel tanks on site should be stored in an area away from traffic and be protected against impact. They should also be locked up to protect against theft.

Commercial Property Insurance is designed to reimburse you for lost assets, but it can also help cover the loss of income or an increase in expenses related to property damage from an event such as a fire.

Business Interruption Insurance is designed to replace a source of business revenue that's suddenly reduced or eliminated by certain disruptive events, such as fire. This coverage can also extend to additional expenses that can help you get back to business quickly after an incident.

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WATER DAMAGE

Water issues can arise from various sources, such as rain or weather-related events, drainage problems, or the improper installation of piping during construction projects. Loss of property can be significant, since water can quickly spread to other areas.

“Water is fluid—it moves, it gets into places, it’s drawn to low spots,” says Muldowney-Brooks. “Construction sites need to have a water damage mitigation program in place and a manager who is responsible for inspection and overseeing where main drainage and control valves are.”

Most water damage losses are not the result of a major natural disaster—they often result from faulty workmanship or inexperienced personnel. For instance, improper installation of pipes and connections by various contractors can result in large losses when piping systems are charged or pressurized for the first time.

Since connections may initially hold, it might take weeks or even months before incomplete or improper installations are exposed. But once a building is enclosed and interior finishes are being installed, the resulting damage to drywall and finishing trim greatly increases the cost of repairs.

Many of these losses are preventable with proper risk management, which includes supervision, testing, and accountability. Having water damage protocols in place, along with adequate planning and continuous monitoring, will go a long way to mitigate risk.

Creating a Water Damage Risk Management Program

A water damage risk management program should address multiple types of water damage losses including site and sub-surface drainage problems, foundation and structural element problems, unsecured openings (such as doors, windows, and roof openings), internal plumbing deficiencies, freezing of exposure pipes, catastrophic weather events, and carelessness (such as leaving a tap open).

Designate a water damage risk management program manager, responsible for overseeing and enforcing requirements of the water quality assurance program (similar to NFPA 241 for fire protection)—with the authority to require changes and, if necessary, stop work. To be effective, this person should be experienced in the mechanical and plumbing trades and be able to visually identify faulty materials and workmanship.

- Establish an overall inspection routine and retain written and photographic documentation of these inspections. Pay particular attention to areas where water can accumulate, like drains, the bottom of stairwells, the bottom of elevator shafts, and underneath hot water tanks and boilers.
- During procurement, allow only quality materials that meet project specifications to be used. Retain a record of the manufacturer and supplier of each component part. Although not currently a requirement of the National Building Code, UL or CSA approved plumbing materials are preferred (this is mandatory for critical components, such as valves).
- Select competent suppliers and subcontractors based on their experience, reputation, and past performance rather than solely on price. Provide direct supervision of apprentices and trainees by qualified or certified employees; apprentices should never be allowed to work unsupervised.
- Schedule the delivery of water-sensitive materials and installation of interior finishings after the building has been enclosed and the project made watertight. If this isn't possible, provide a dry temporary storage environment, such as skids raised off the floor and fully tarped. If elevators must be installed prior to the final testing of the full water system, establish a plan to minimize damage in case of water leakage.
- Ensure there is a formalized inspection, certification, and sign-off of each water system prior to its commissioning. All incidents of water escape must be investigated and documented. Store written records so they're accessible in case of an audit.

> Many high-rise condos or office buildings are being occupied during construction, so they have exposures they wouldn't normally have. That's why sensor technology is important.
>
> Fred Muldowney-Brooks, Vice President of Risk Services at Northbridge Insurance

Water Management Devices

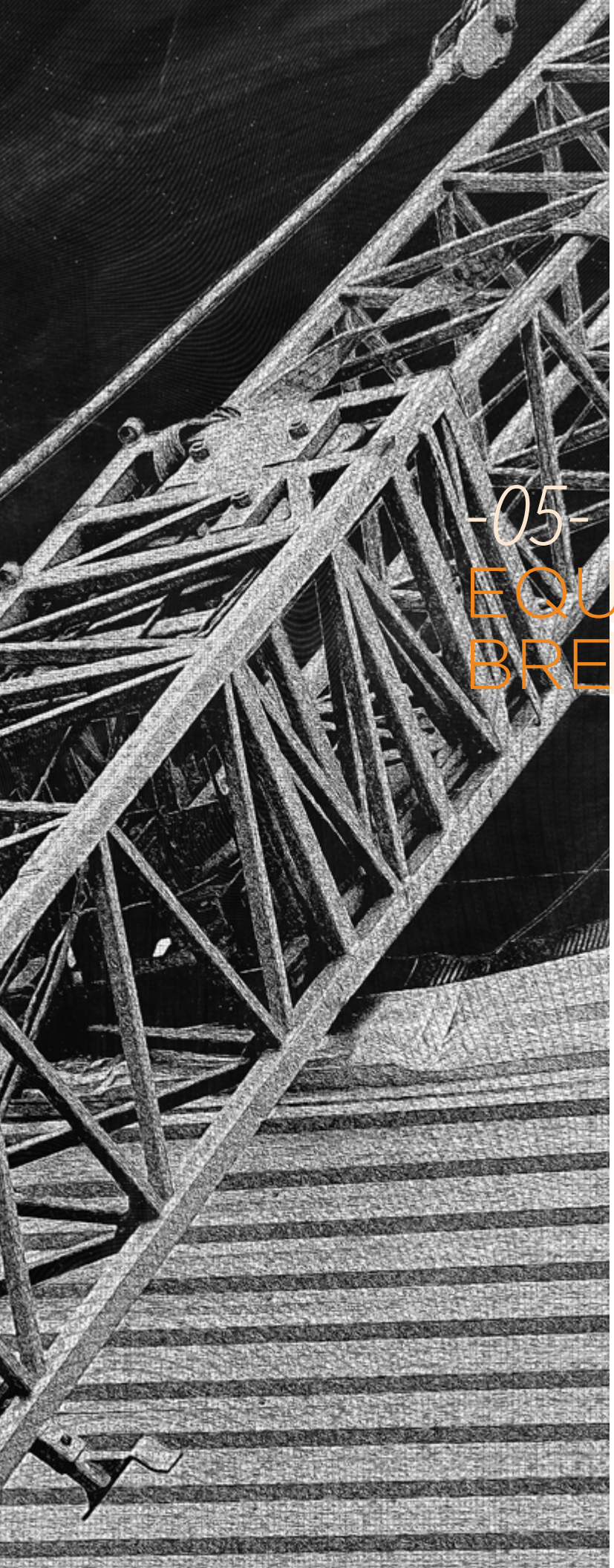
The key to water damage mitigation is rapid detection and quick isolation—and the taller the building, the more important this becomes. Water detection devices and smart sensor technologies can play a key role in both detection and isolation.

Water detection devices, for example, can provide real-time monitoring of leaks and floods. Some smart sensor platforms even offer analytics to identify small problems before they become bigger ones.

Devices should be installed on incoming risers to differentiate between normal and abnormal flow—such as water flowing when it shouldn't be, excess flow, or leakage. Anything out of the ordinary will trigger an alarm (typically to an off-site ULC approved monitoring facility).

These devices should also be installed on floors situated under incoming water risers, in electrical equipment rooms, around air conditioning units, at the bottom of elevator shafts, under hot water tanks, and under heating boilers.

"These days, many high-rise condos or office buildings are being occupied during construction, so they have exposures they wouldn't normally have," says Muldowney-Brooks. "That's why sensor technology is important, but site managers also need to know where all the valves, drains, and shut-offs are."



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EQUIPMENT BREAKDOWN

Equipment breakdown refers to accidental damage to electrical, mechanical, pressure, or electronic equipment (for insurance purposes, it's not related to aging equipment). For builders and contractors, equipment breakdown could interrupt business operations and result in costly repairs or replacement.

As a component of commercial property insurance, equipment breakdown insurance specifically covers electrical or mechanical breakdowns that result from power surges, electrical short circuits, electrical arcing, ruptured hot water tanks, and other such incidents.

Construction Insurance is designed to indemnify the project owner and contractors for their labour, equipment, and building materials during the course of the construction project, including accidental equipment breakdown.

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THEFT

Tens of millions of dollars' worth of heavy equipment and tools are stolen each year from Canadian construction sites. Theft can be traced back to local bands of thieves, but increasingly organized crime is moving onto building sites.

After all, heavy equipment and tools are easy to steal, easy to sell, and have a low recovery rate, often being shipped out of the province or country within hours. Valuable raw materials are also coveted by thieves, such as copper or aluminium used in scaffolding.

The cost of replacing stolen equipment, tools, or materials isn't the only consequence of theft. Delays in project completion can increase costs and possibly trigger late penalties. Additionally, contractors could be held liable if the stolen equipment causes damage to people or property.

"Equipment and material theft is a big concern on construction sites," says Muldowney-Brooks. "But theft prevention is easy if construction companies and contractors take the time. Each layer you add on makes it more difficult for somebody to steal your equipment or materials."

Equipment Theft Prevention Measures

An effective equipment theft deterrent program begins by establishing protocols that become an integral part of all employees' daily activities and includes multi-layered measures (outlined below). Low-hazard equipment can incorporate multiple measures from the first layer, while high-hazard equipment may require multiple measures from all four layers.

Layer One: This consists of the basics such as removing keys, locking doors, parking in well-lit areas, and securing equipment in a controlled area.

Layer Two: This includes audible or visible warning devices that deter theft, such as alarms, steering column collars, steering wheel and brake pedal locks, wheel boots, tire deflators, hydraulic lock-out systems, and cab shields. Etching VIN or ID numbers onto windows or parts will help discourage resale.

Layer Three: This contains immobilizer devices, smart keys or key transponder systems, cab control access code systems, fuse cut-offs or kill switches and starter or fuel disabler switches (that prevent hot-wiring and bypassing of ignition systems).

Layer Four: This includes tracking systems, geo-fencing systems, motion-sensor lighting, and surveillance cameras covering the storage yard.

Tool Theft Control

Contractors shouldn't leave their tools sitting out for extended periods of time; tools should be stored in a secure location or off-site after use. For an additional layer of security, use on-site lock boxes with hardened locks (with hidden shackles) or secure tools in an enclosed building with alarms, if they must stay on the job site overnight. Also use etching or marking technology to deter theft and discourage re-sale.

Record Keeping

Detailed records of equipment and tools used on a job site are necessary for making a claim in the event of theft. Equipment records should include details such as serial number, make and model, date purchased, value/cost, markings, photos, and any details that help with identification. Tool records should include date of purchase, description, and photos.

Material Storage on the Job Site

Co-ordinate delivery of materials with suppliers so they arrive only when you need them and limit the amount of materials left on the job site to reduce the potential for theft. Store materials in a secure location, preferably a fenced compound with an alarm system. Consider increasing security measures after valuable materials or equipment have been brought onto the site or installed in the project.

Commercial Property Insurance protects the space, equipment, devices, and other physical assets your company relies on.

Remote Site Surveillance Monitoring

Given that theft on construction sites is a growing problem, remote site surveillance monitoring is an increasingly popular option. A good surveillance system can help to mitigate risk by including full perimeter protection and act as a deterrent, making criminals think twice before committing theft or arson.

It could also help to detect a problem earlier. During off-hours, emergency crews could be immediately notified of theft or arson, which could reduce the scope of the damage, claims costs, and impacts of business interruption.

"Site surveillance technology is evolving, and there are a number of vendors providing remote site surveillance capabilities," says Muldowney-Brooks. "They can provide remote monitoring around the clock and send a security response to the site if necessary."

The technology is also becoming much more sophisticated. While today's all-weather cameras offer pan-tilt-zoom, day and night vision, infra-red technology, power backup, and two-way voice capability, live monitoring via a remote monitoring station can provide full-site video tours every 15 minutes.

Construction surveillance with live monitoring typically allows for early detection, which can help limit or prevent loss, whereas video recording with no live monitoring can only help to identify the perpetrator of a crime—it can't mitigate risk. Ensure surveillance cameras are placed to provide a complete view of the site's perimeter. As the project develops, blind spots may occur as buildings are constructed so the system should be re-evaluated periodically to ensure full visibility. Consider using a backup monitoring centre to record and hold your footage in the event that a disruption, such as a power surge, impacts the main monitoring station.

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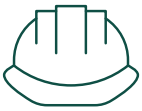
PREVENTING INJURIES ON-SITE

On construction sites where potential hazards are present, keeping employees safe is a top priority. Safety measures should include a personal protective equipment (PPE) program, guided by policies and procedures that spell out what types of equipment are required for which jobs and locations.

Personal Protective Equipment

PPE is the equipment workers wear—from hard hats to safety boots— to keep them safe in potentially hazardous work environments. The type of equipment required varies widely, depending on the type of work and the nature of potential hazards that may be present. PPE also needs to be properly maintained and inspected on a regular basis, and workers should be fully trained in the proper use of their equipment. PPE may include:



Head protection: Hard hats are designed to protect the wearer against injury to the head. Different types and classes of hard hats provide protection against impact and penetration from above or laterally, as well as different levels of protection against electrical contact. Manufacturers state that hard hats are good for five years, depending on use, but in harsher environments that could be reduced to two years. This equipment should be reviewed on a regular basis and switched out when necessary.

Eye protection: Protective eyewear can range from safety glasses and goggles to face shields and masks. Any work that involves hammering, drilling, or cutting that can cause particles to fly requires eye protection.

Hearing protection: Exposure over time to loud noise is a leading cause of hearing loss. Workers exposed to noise in the workplace should wear hearing protection such as ear plugs, semi-insert plugs, ear bands, or earmuffs.

Hand protection: Different types of protective gloves are designed to deal with different types of hazards. For example, chemical protective gloves provide protection against exposure to chemicals, while others are designed to protect against abrasions, cuts, and punctures, as well as extreme heat and cold.

Breathing protection: Breathing protection ranges from simple dust masks designed to filter out airborne particulates to chemical canister respirators and supplied-air breathing apparatuses used where oxygen levels are low or toxic gases are present.

Foot protection: Safety footwear protects against a range of workplace hazards. Impact and crush resistance—the familiar steel toe or hard cap—is often a requirement on construction sites, along with puncture resistance for the sole and sides of the footwear. Other safety features may include slip resistance and protection against electrical contact. Appropriate footwear should have a green triangle on it, which indicates sole puncture protection with a Grade 1 protective toecap.

Specialized PPE: Specialized types of PPE are used in specific industries and for specific applications: the welder's face shield that protects against intense UV light, the chemist's splash guard face shield, or a circular saw operator's cut-resistant pants are just a few examples.

Working at Heights

Fatal falls are still the top cause of death among construction workers and contractors, according to The Center for Construction Research and Training (CPWR). That means there's room for improvement in site safety. Ladders, scaffolding, and fall protection are at the heart of a construction site safety program, and there are simple, cost-effective ways to improve safety practices when using these common pieces of equipment.

Ladders: Any piece of equipment with multiple joints or load-bearing platforms—like a ladder—can become a safety hazard, especially with wear and tear. Improper ladder use is a leading cause of fatal falls for construction workers. Ladder safety checks should be conducted prior to use.

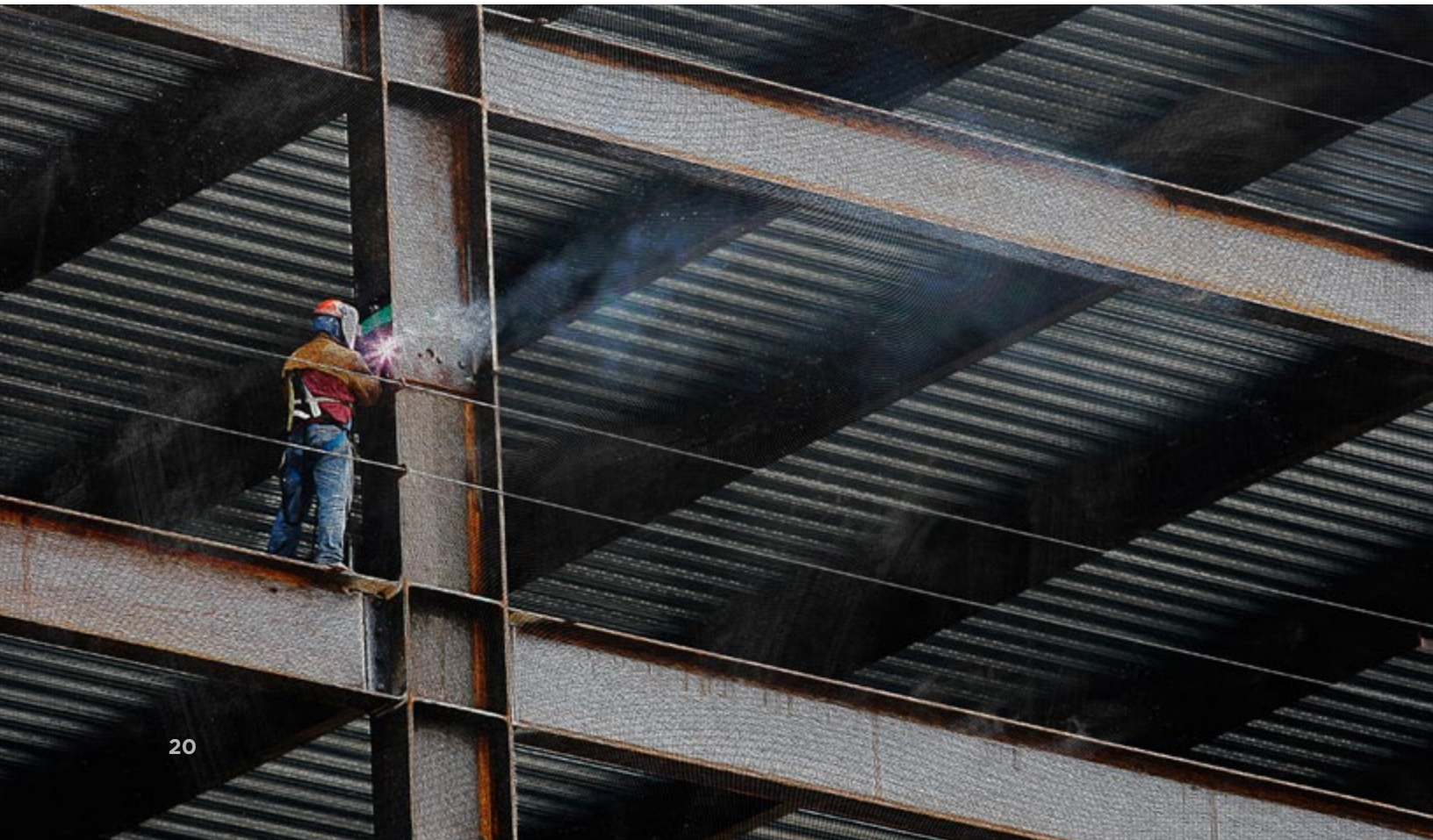
Harnesses: A personal fall arrest system can be great insurance against a disastrous fall on a construction site—but only if it's in perfect working order. Like any important tool, harnesses should be inspected closely and frequently, and always used properly.

Scaffolding: While scaffolding is an integral part of a construction site, it's potentially the most dangerous for workers. This type of raised platform not only exposes workers to falls but also to electrocutions and falling objects. Practise careful tool placement and be conscious of weight limits.

Technology

Advancements in construction technology aren't just improving productivity; they also make job sites—and workers—safer. Through the use of artificial intelligence (AI) and machine learning (ML), for example, construction firms can use real-time data to improve site safety and reduce risks.

Wearable tech embedded into apparel and PPE can be used to monitor workers and keep them safe. For example, safety supervisors could monitor hazards such as slips and falls or determine if workers are fatigued by using sensors, biometrics, and location trackers. And with geo-fencing, built-in alarms could alert workers if they're entering a hazardous zone.



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LIABILITY

Subcontractor Liability

Subcontracting can introduce significant liability exposure to a construction firm. If the work isn't done properly and a loss occurs, the subcontractor could cost you your business, your reputation, or both. If the subcontractor has no insurance or insufficient insurance, you may be held liable. And if your insurance company now has to pay because of a subcontractor, your loss history will be impacted and your premiums may increase.

For this reason, it's important to vet subcontractors before issuing a contract. The vetting process could include purchasing a credit report, asking for documentation of bonding capacity, and getting references from other general contractors. A certificate of insurance that details liability insurance coverage should be requested from each subcontractor. This should be requested prior to each project or annually for subcontractors who regularly work for you.

The same goes for vetting vendors, particularly if you're sourcing custom components or hard-to-find materials. In this case, you want to assess the vendor's financial stability and shipping reliability—ask for copies of financial statements, purchase a credit report, and get customer references. For vendors who are critical to your operations, do your due diligence; in some cases, it may be worth lining up a second source just in case.

Site Visitors and Traffic Control

Visitors such as purchasers, suppliers, and even trespassers can get hurt on construction sites—but it's the builder's responsibility to keep them safe. Home purchasers, for example, may want to check in on the progress of their home while it's under construction. But this is dangerous for many reasons; they're unfamiliar with the site, don't have proper safety gear, and could injure themselves on unstable structures.

Job site safety can be improved in two ways: communication and control. Communicate to visitors (and the general public, if applicable) that they're entering a restricted-access site and must first check in with the site supervisor. Purchasers, subcontractors, and suppliers should also be aware of who may enter the site, when they'll be there, and how they'll enter the site.

Control the site with fencing, alarms, and motion sensors. Also, include a clause in the sale agreement that restricts your liability if a purchaser is injured on the job site. Precautions should be put in place if you're operating on a commercial site where partial occupancy may occur before completion of the project. You could also create a brochure that informs visitors about your job site policy, including workplace safety and health act requirements.

Slips, Trips, and Falls

Falls are the leading cause of injury in Canada, with more than 42,000 workers suffering injuries due to slips, trips, and falls every year, according to the Canadian Centre for Occupational Health and Safety—but they also rank high on the list of preventable injuries. Slip and fall hazards take many forms, but the only way to reduce risk is to be aware of conditions on the job site and manage them appropriately.

The parking lot should be inspected at regular intervals for potholes, uneven surfaces, and other debris. Walkways and stairways throughout the site should also be regularly inspected and areas of concern clearly marked and repaired as soon as possible. Emergency exits should be obstruction-free at all times.

In the winter, if snow and ice removal is done by a third-party contractor, ensure there's a written contract or service agreement that clearly defines the work to be done and the roles and responsibilities of each party. Obtain a certificate of insurance from the contractor and have your insurance broker review the coverages and other details to make sure their liability insurance is in order.

Indoors, all employees should keep an eye on the condition of the flooring, including floor coverings like carpeting, to help reduce the risk of slips and falls. It's important that any wet floors are dealt with immediately (such as melted snow that leads to slippery surfaces).

All floor mats should be replaced at regular intervals and inspected on a daily basis. If this is done by employees, maintain a log book. If mats are replaced by a third-party contractor, a copy of the maintenance contract, certificate of insurance, and purchase orders or invoicing should be kept on file.

Establish an inspection and monitoring procedure to manage slip and fall hazards on the job site. A daily routine (or more frequent monitoring, if the weather dictates) could go a long way in reducing slips, trips, and falls.

Liability Insurance is designed to cover claims of bodily injury or property damage arising out of your work or your products, including when your business is found liable for an injury (such as a slip and fall). This coverage can provide welcome financial support as you go through the legal process.

Wrap Up Liability is a subset of liability insurance geared toward construction projects and can cover owners, contractors, and subcontractors. Wrap Up Liability can help cover your legal costs for liability exposures that result in damage or loss for your client.

Underground Utilities

Underground utilities include communication lines, power lines, sewers, water pipes, natural gas pipes, and alarm systems, among others. Each type of underground utility presents its own hazards. But they all represent a significant injury exposure to workers from explosion, fire, asphyxiation, and electrocution—as well as potentially large losses from damaged equipment and business interruption.

Damage to underground utilities from excavation and trenching activities is more common than one may think. Many construction projects require some degree of excavation or trenching and it's critical that all efforts are made to prevent damage to these utilities.

The contractor, working with the owners of the underground installations, should identify the utilities, locate them, determine the potential hazards and come up with a method of controlling them. A checklist identifying the utility services that must be contacted before any work begins is a simple and effective preventative measure. It's also important to have a written procedure in place for conducting utility locates.

Simply receiving verbal confirmation is not sufficient—documentation confirming all necessary precautions have been taken is important in the event a utility is damaged. An emergency plan should also be established in the event damage occurs.

-09- COMMUNICATION

On any job site, clear communication is essential for worker safety, efficiency, and productivity. That starts with clear lines of communication between the head office and the job site, as well as between site supervisors and on-site employees, subcontractors, and suppliers.

Field and office communication failures can result in delays, re-doing work, and costly mistakes. By establishing a formal chain of communication and documentation, you can mitigate risks and potentially avoid costly claims.

Communication includes phone, email, text, and instant messaging, but on a job site it could also include radios, intercoms, and even hand signals, as well as face-to-face meetings. For a simple request, a text might suffice, but for more complex matters a face-to-face meeting may be a better option. Job sites can get noisy, so hand signals (as well as flags or other visual alarms) are also useful forms of communication.

The head office should establish a formal chain of communication for important matters, such as ensuring warranties, permits, and building codes are communicated to the CFO and site supervisor. When it comes to project communication, it's helpful to have a main point of contact, such as the project superintendent (who also keeps a record of all project communications).

All communications should be simple and direct; avoid jargon and slang, or any words or phrases that are open to interpretation. Consider whether communications need to be provided in more than one language, which is paramount for worker safety.

There are a number of cloud-based construction management and task management solutions, accessible via a smartphone on a job site, that can help streamline communication and document sharing. Some examples include Procore, Bridgit, e-Builder, Autodesk BIM 360, and Buildertrend. Contact the Northbridge Risk Services team for applications available to our customers that can assist with construction site management.

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CYBER THREATS

Advanced technologies and digital tools are revolutionizing the construction industry, from robotics and autonomous vehicles to drones, embedded sensors, and advanced analytics. But they're also making the industry more vulnerable to cyber threats.

Criminals aren't just looking to breach physical defences like fencing, but virtual ones as well. And the consequences can be dire, ranging from business disruption to reputational damage, as well as severely impacting company finances.

Security breaches have increased by 11 per cent since 2018 and 67 per cent since 2014, according to Accenture and the Ponemon Institute, in a 2019 cybercrime study. According to IBM, the average time to identify a breach in 2019 was 206 days. That means most organizations don't realize they've been hacked until it's much too late.

These days, cyberattacks are less likely to come from a lone hacker in a basement seeking glory. Instead, cybercrime has become a lucrative business for organized crime. "They're in it to steal money or data, and these groups have persisted over time—there are even named geologies," says Derek Browne, Chief Information Security Officer at Northbridge Financial Corporation.

Construction sites are particularly vulnerable, since workers often access corporate networks and applications from remote job sites, often using their own devices over unsecured connections. That makes it easier to become a target for ransomware, phishing scams, cyber fraud, and digital hijacking.

> Criminals' phishing campaigns are no longer working as effectively as they used to, so they've become more sophisticated... They target specific individuals, such as an accountant who is able to authorize wire transfers.

Derek Browne, Chief Information Security Officer at Northbridge Financial Corporation

In the construction industry, some of the most targeted assets include designs (such as architectural and engineering drawings), intellectual property, financial data, and personal data, as well as files or account information that could be held for ransom. The Internet of Things (IoT) can also make buildings and infrastructure a target for hackers.

While it's important to have anti-malware protections in place, one of the biggest security threats is social engineering—where employees are tricked into giving away data (such as passwords or financial information) or tricked into downloading malicious software (such as ransomware).

Phishing e-mails usually contain a malicious attachment or link to a fake website. "Criminals' phishing campaigns are no longer working as effectively as they used to, so they've become more sophisticated; they do a lot more reconnaissance before they send out an email," says Browne. "They target specific individuals, such as an accountant who is able to authorize wire transfers."

Another security risk has to do with partners. "Partners are essential, but you have to make sure that those partners are as secure or more secure than you are if you're going to share data," says Browne.

Construction firms should have a resiliency plan in place, which includes training employees on how to identify social engineering attacks. Being proactive with risk mitigation strategies could help to avoid or minimize the damage of cyberattacks. This includes:

- **Segment networks:** Manage user privileges and restrict network access to employees and third parties as required.
- **Update software:** Keep software up to date so there are fewer weaknesses for criminals to exploit.
- **Invest in a good defense system:** Use multiple layers of security controls, including a firewall, intrusion prevention system (IPS), and intrusion defense system (IDS).
- **Back up your data:** Ensure data is backed up off-site or in a cloud-based storage solution in the event that a vulnerability is exploited.
- **Encrypt mission-critical data:** Encrypt all sensitive information when transferring or storing it online.
- **Educate employees:** Provide training on how to recognize cyber threats—show examples of phishing scams and run simulations of a phishing attack.
- **Stick to your policies:** Compile a list of policies and procedures, commit to enforcing those policies, and create protocols for when a device has been stolen or lost.

Cyber Risk Insurance provides support if computer networks are breached, causing information to be stolen or ransomed, business operations to be interrupted, computer systems to be corrupted, or other similar consequences. It also provides support if you need to deal with things like network repair, legal claims, and public relations services to help restore your reputation.

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DOCUMENTATION AND PROCEDURES

Surprisingly, many losses, liabilities, and subsequent insurance claims are not the result of a contractor's negligence on a project, but because the contractor can't provide the required details—the work performed, materials purchased, and suppliers used—or provide documentation to verify work performed by subcontractors.

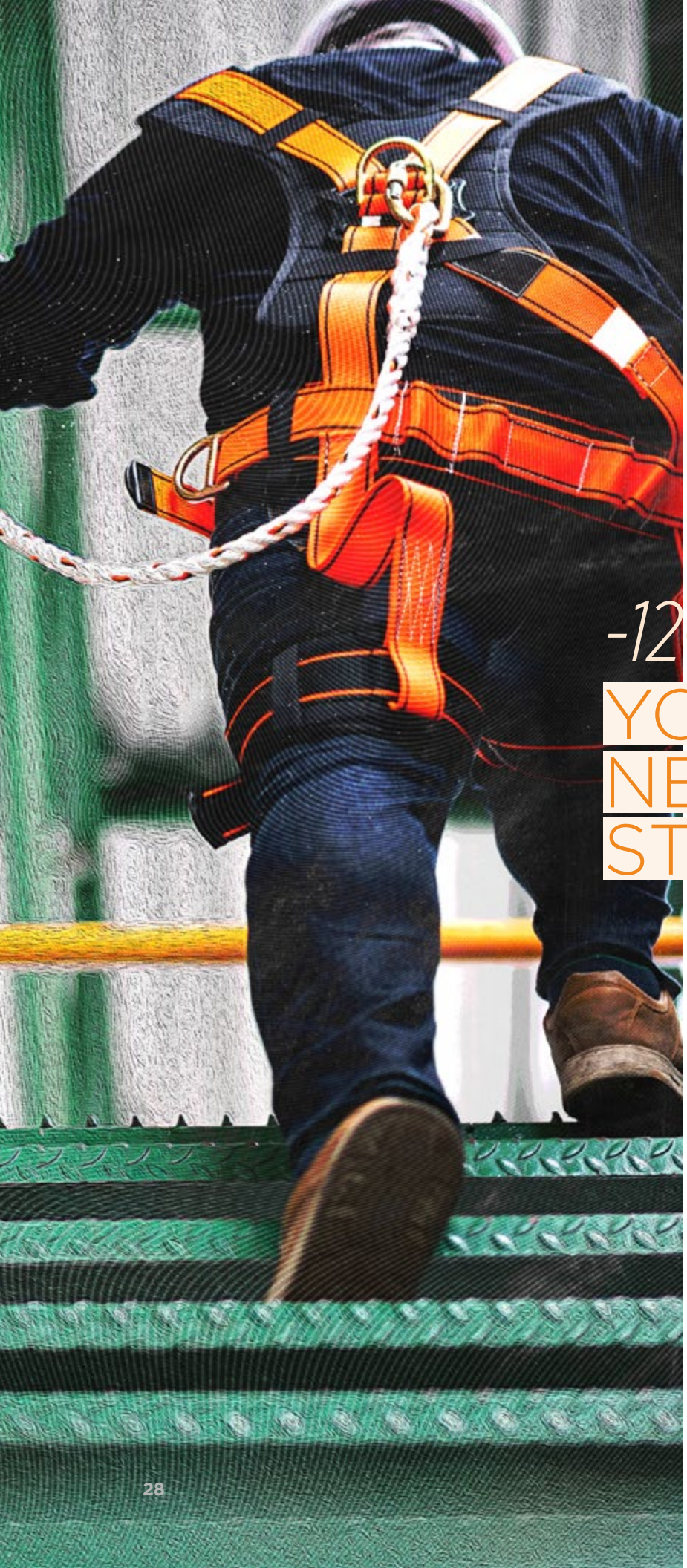
The responsibility for obtaining documentation on work performed and materials used to complete a project lies with the contractor. Since actions against a contractor can occur years after project completion, efforts should be made to retain those documents indefinitely.

Examples of documents that should be maintained include contracts and construction schedules, technical specifications, shop drawings, tenders, invoices, purchases and payments, progress reports, inspection reports, audit reports, equipment records, and correspondence.

With the help of a document management system, maintaining proper documentation isn't as complex or cumbersome as it may seem at first. Much of this data can be captured and digitized on smartphone apps, allowing you to easily create documentation for inspections, checklists, and audits, as well as take notes and photos or even do observation reports.

"If there's a loss involving a part, from an insurance perspective we need to know when it was inspected, if it met standards, if it was the part specified in the documents, and if it was purchased from a reputable supplier. Having those documents available for loss reporting is extremely important," says Muldowney-Brooks. "The technology exists and companies should be looking at how they can digitize their processes."

Once procedures are in place, it's equally important to ensure that all managers, supervisors, site foremen, and workers understand and follow those procedures. Holding a workshop on document retention procedures and providing employees with a copy of those procedures is good due diligence and company practice.



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YOUR NEXT STEPS

Being proactive can go a long way in reducing risks and minimizing the impacts of damage, theft, and accidents. But things can still go wrong. That's where insurance comes in—but there is no one-size-fits-all coverage for construction firms and contractors.

With such a wide variety of insurance packages out there, the choices can be overwhelming, and a specific product like construction insurance might seem pointless if you already have a general business policy. But different industries bring different exposures, and the construction and contracting sectors come with their own unique set of risks.

Whether you work in infrastructure, residential, commercial, or institutional construction, there's a lot on the line. When you take on a project, everything from equipment and employees to materials and job sites need to be protected—and a more general policy may not cut it. The bottom line is that every business needs insurance, but what's most important is that you have the *right* coverage for the job.

Construction vs. Contracting Insurance

Running a nationwide construction firm requires a different toolkit than a small general contracting business. Any new construction project is typically a large undertaking, with many people involved. In turn, a construction firm needs more comprehensive and flexible protection that can extend to individual workers, which comes in the form of a construction insurance policy.

Contractors who specialize in a specific trade—whether electrical work, concrete installation, or interior finishing—face specific risks and must look out for their own safety. While contractors need some of the same coverages as a construction firm, their policy should also speak to their specific trade and its inherent exposures, as well as their business assets and daily operations.

Construction Insurance from Northbridge Insurance

Your insurance coverage should help you finish the job on time, no matter what happens. From project-specific insurance policies to comprehensive bonding solutions, our construction insurance policies have the features your business needs to stay protected. Our products cater to a variety of construction subsectors, including residential, commercial, institutional, or infrastructure.

Unique Coverages for Construction Firms

Property and liability coverage are the two main categories of business insurance, but there are more specific insurance features that speak to elements of construction projects.

Builder's Risk: A subset of property insurance tailored to the construction industry, Builder's Risk is designed to cover the project owner and contractors for their labour, equipment, and building materials. This becomes increasingly important as a project continues, as more materials accumulate and more equipment is stored on the job site.

Contractors' Insurance from Northbridge Insurance

Contractors face a variety of risks, from the moment they take on a project to the finishing touches. From equipment damage to bodily injury, major issues can arise during the course of construction. As a contractor, you can't count on someone else looking out for your best interests – you have to protect yourself in case something goes wrong. Without the right insurance, contractors can face significant expenses, like major equipment replacement costs and legal fees that come with liability claims.

Different types of contractors are exposed to different types of risks. We've crafted separate policies to align with the needs of each of these contracting subsectors, from general contractors to trade contractors. Our insurance products for contractors include some of the most important coverages to safeguard your tools and equipment, cover errors or omissions in your work, and keep your employees protected when they're on the road.

Unique Coverages for Contractors

Contractors need coverage from the very start of a project—and sometimes even after the project wraps up.

Installation and Tool Floater: If the materials you've stored on a job site are vandalized or burned to the ground, you'll be left with a major replacement expense—but Installation and Tool Floater insurance could help cover those costs.

Commercial General Liability: Mistakes happen and they can be expensive. If you were to inadvertently cause third-party property damage or bodily injury as a result of your work or operations, a Commercial General Liability policy can help cover the loss. It could also defend you and your company against such allegations.

Non-owned Auto: Your personal auto insurance policy may not measure up if you or your employees run into trouble while using your own vehicles for business errands. But if you were to hit another car and injure the driver while delivering tools to a job site, a non-owned auto policy extension could step in to help.

Building Your Policy

Your construction or contracting business has many moving parts. Despite some common and crucial coverages, there's no one-size-fits-all policy, so it's important to examine your needs against the available options. This is where a broker can help. Visit our Construction Insurance page or Contractors' Insurance page to see how our policies check all the boxes.

Risk Management Services

The Northbridge Insurance Risk Services team provides innovative risk services solutions, along with guidance to enhance your risk management practice. We have more than 60 experts across the country with in-depth knowledge and experience across a number of industries, and each year our team conducts close to 6,000 risk assessments and service calls for Canadian businesses. We also offer a variety of services and training offerings to help you run a safer, more profitable business.

About Northbridge Insurance

Northbridge Insurance is a proud member of the Fairfax family. We have a history and reputation for innovative commercial and specialty insurance solutions created with the customer in mind. Working closely with our trusted network of broker partners, we offer tailored solutions and superior service for the construction industry. For more information, visit our website at *www.nbins.com* or contact your Risk Services Consultant or our Risk Services Department at 1-833-692-4111.

APPENDICES

Appendix A
Subcontractor Checklist

Job Details

Subcontractor

Job

Date

Coverage	YES	NO
Certificate of Insurance received from the Subcontractor?	☐	☐
Work History		
Have you identified at least three similar jobs this subcontractor has recently completed?	☐	☐
Have you verified the quality and timeliness of this subcontractor's work with owners and general contractors?	☐	☐
Do you feel that the subcontractor's employees can adequately perform the work?	☐	☐
Documentation	☐	☐
Claims History – Insurance & Protection		
Does the subcontractor carry adequate liability insurance coverage?	☐	☐
Have you reviewed the subcontractor's claims history for the past three years as an indicator of workmanship?	☐	☐
Financial Stability		
Have you verified the subcontractor's bonding line of credit (if applicable)?	☐	☐
Have you requested a Dun & Bradstreet, Equifax or other independent financial report on the subcontractor?	☐	☐

Notes

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Appendix B

Slip & Fall Incident Report

Property / Premises Owner: _____

Incident Specifics

Date of incident: _____

Date reported: _____

Time of incident: _____

Time reported: _____

Location (inside / outside): _____

Reported by (Name): _____

Position: _____

Phone Number(s): _____

Incident and Injury Details

Injured person's physical description: _____

_____

_____

Phone number: _____

Description of Injury: _____

_____

_____

_____

_____

_____

Incident Description (use reverse for more detail):

_____

_____

_____

_____

_____

_____

_____

Additional Details

Type of footwear worn: _____

Weather conditions at the time of incident: _____

_____

_____

Witnesses

Name: _____

Address: _____

_____

Phone: _____

Name: _____

Address: _____

_____

Phone: _____

Injured Person's departure from the scene:

¨ Unassisted ¨ Public Transit

¨ Ambulance ¨ Other: _____

Attachments

Attach any photographs of the incident site.

Name of photographer: _____

Date photographs taken: _____

Phone number(s): _____

Signature of Incident Reporter:

_____

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Appendix C

Underground Utilities Checklist

Job Details

Your company name	Party that will be drilling/excavating (if not yourself)
Name of person requesting the locate(s)	Party that will be drilling/excavating (if not yourself)

Utility Called

Communications Company 1 (Telephone, cable, ...)		
Phone:	DATE: MM/DD/YYYY	TIME:
Operator/reference #:		
Communications Company 2 (Telephone, cable, Internet ...)		
Phone:	DATE: MM/DD/YYYY	TIME:
Operator/reference #:		
Electric		
Phone:	DATE: MM/DD/YYYY	TIME:
Operator/reference #:		
Gas		
Phone:	DATE: MM/DD/YYYY	TIME:
Operator/reference #:		
Water & Sewer		
Phone:	DATE: MM/DD/YYYY	TIME:
Operator/reference #:		

Notes

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