

Building Better

A First Nations National Building Officers Association publication

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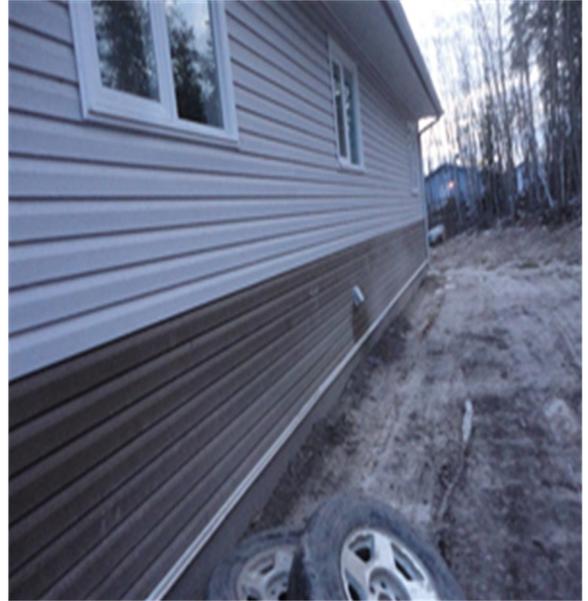
Eagle's Eye on French Drains

Despite its name, the French drain may not have come from France. In his 1859 book, *Farm Drainage*, Henry Flagg French popularized the use of trenches filled with gravel or roofing tile to drain surface water off farm buildings, while protecting the surrounding soils from erosion. Improvements over the years include the use of manufactured pipes, embedded in gravel, to allow the water collected to flow freely. In today's home, we use the same concept to protect foundations from groundwater by installing perforated pipe (weeping tile) leading to a catch basin (sump pit) for final dispersion outside the building. We also see it in sewage systems where sewage is treated in two-stage tanks, discharged into a weeping bed, where the effluent percolates into the soil in chambers covered with gravel.

Swales are often used to divert surface water run-off from houses, but can be ineffective over time, due to soil erosion or frozen water. Weeping tiles have proven very effective in controlling ground water, and can be just as effective in controlling surface water run-off, by controlling the route the water takes. In their purest form, French drains are ditches filled with gravel, but with the addition of manufactured products such as drain tiles, or culverts, the home can be isolated, reducing the chances of water damage.

Steps to installing an effective drainage system

1. Start by determining where you want the final dispersal point to be. That can be a drainage ditch, dry well or catch basin, where it can be diverted to the community's storm-drain system. The catch basin can even be part of a rainwater-collection system. It can be as simple as a buried rainwater barrel. Locate buried utility services by using "Call Before you Dig." You don't want to dig up a gas line or electrical service.



Before and after pictures showing the addition of a French drain. Before the addition of a drainage ditch, the house was chronically flooding in the spring or during heavy rains. The basement is now dry and the occupants are developing the basement.

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FNBOA

President's Message

Inspectors don't build bad housing; bad builders do

Powered by oil revenues and a thriving casino resort, a band is building quality homes under the Section 10 program. These are not your typical, overcrowded, three-bedroom bungalows. With developed basements, superior finishes, and high-efficiency mechanical equipment and appliances, they could be show homes. One of the builders has consistently won Consumers' Choice awards since 2009.

I first met their field-operation manager on a prior-to-backfill inspection. On every other reserve where I've worked, the construction of homes is managed and overseen through the housing department. In this case, the builder is also the project manager, with little oversight by the band. It made me wonder if the builder was aware that no regulatory framework is in place for homes built in First Nations communities. While the Safety Codes Act protects homeowners off reserve, it is not enforceable on federal lands, such as reserves.

While much has been said of the 2003 Report of the Auditor General of Canada (Chapter 6, "Federal Government Support to First Nations Housing on Reserves"), little progress has been made on the recommendations. Specifically, code compliance for on-reserve housing cannot be proven, and builders are poorly trained.

It really is the Wild West out there.

During the last recession, when our dollar hit parity with the US, we were inundated with American mobile homes, for which a vapour barrier was not a code requirement. Closer to home, a volume builder has been selling homes that fail on ventilation requirements. As I write, these homes, not even five years old, are on the renovation list, to bring them back to minimum standards of health and safety.

Focus groups looking at deplorable housing conditions have all criticized the use of unskilled labour to build houses. Briefs presented to the Standing Senate Committee on Aboriginal Peoples further state the need to support capacity for building and managing houses. The problems are more evident in remote and small communities, where nepotism decides who gets the contract, not skills or past performance. I've even seen cases where the contractor was a member of council. In what community off reserve is the contractor allowed to self-declare code compliance? Yet this is allowed in First Nation communities.



Bud Jobin

Much has been said of the attestation on code compliance, which requires a qualified inspector to sign off on the project, but little has been said of the builder. Inspectors have no authority to shut down sites, stop progress or force contractors to address code violations or shoddy work. Holdbacks that should ensure work completion and quality control are often prematurely released. Performance bonds that would ensure satisfactory completion of a project by a contractor are not used. While mechanical and electrical contractors must produce a trade's ticket, there are no such requirements for the contractor building the structure.

Seeing that no formal training is in place, we're not surprised that moldy homes continue to be an issue. Moisture-control mechanisms, which are part of the building code, are often not understood by the contractor. Poor ventilation, missing vapour retarders and poorly installed moisture barriers are the result. We've reviewed very few invitation-to-bid forms, attached to specifi-

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cation packages, which indicate the skill level of the contractor. PAGC, which recently updated their tender documents, has a detailed section on contractor expectations. Tsu Tina is developing a permit system. These communities are role models for others.

We welcome reputable builders who use competent tradespeople and quality building materials, but in the end, most of our bands are stuck with contractors and suppliers meeting low bid. Alas, high levels of substandard housing are expected to continue.

We asked one builder about inspections. This was the response:

“A reputable builder welcomes inspections of their work. Even though materials are chosen according to building-code regulations, and labour is also performed to that end, another set of eyes is always a good thing. Some inspections are required at specific stages, depending on what jurisdiction the construction takes place. A builder that cares about the quality of their construction will often add one or more of their own, either done by the builder's staff or an independent, outside agency. Most homes built by established home builders in Alberta have a minimum of eight inspections by outside agencies, as well as the ongoing quality control of the company's site manager... Ensure the home builder is a registered member of provincial and national organizations, such as the Canadian Home Builders Association, and a reputable warranty provider, such as the Alberta New Home Warranty Program. Of course, a builder that band members have dealt with can give first-hand feedback on the whole process.”

We asked Compliance Strategy about risk-management techniques bands should use when choosing builders. Here is their advice:

Use a construction contract that has been written by the Chief and Council's legal advisor, and don't rely on contractors to write their own contracts.

Ensure that contractors are properly trained and have various certifications. Contractors should provide proof of professional skills. If subcontractors are used, ensure they hold the required certifications. Subcontractors should also provide proof of professional skills. Check with references before hiring a contractor.

Engage a project manager or architect who may be in a much better position to oversee the contractor's services. This may be especially the case if the builder is from the community.

Use complete designs that have been stamped by a qualified engineer or architect.

If contractors are from outside the community, ensure that they hold all required certifications and insurance (e.g., workers' compensation). Check with several references. Also, check the Better Business Bureau for complaints against the builder. Be prepared to visit buildings they have completed. Talk with the building owners.

If the contractor is from the community, ensure that they hold all the required certifications and insurance (e.g., journeyman certificates, workers' compensation).

Conduct competent and adequate site supervision. Don't let the builder provide self-assessments of code compliance and adherence to contract details.

Building good homes comes from all of the work done at the front end. Selecting a competent contractor is one part. Another is engaging your inspectors to review plans and monitor construction, to ensure the planning department's vision is fulfilled.

Good builders work with the inspector to create quality homes.

Additional Reading

Canadian Home Builders Association
www.hiringcontractor.com

Canadian Construction Association
www.cca-acc.com/en/

First Nations National Building Officers Association
www.fnnboa.ca.

For more information regarding sample copies of construction contracts, please send your request to info@fnnboa.ca

Construction Owners Association of Alberta—This website provides a variety of sample contracts.
www.coaa.ab.ca/Contracts/ContractsLibrary.aspx

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2. Determine the highest spot in your yard. When you dig the trench, excavation will slope downwards toward the final point of dispersal. One inch of slope for every eight feet will ensure the water can move freely through the pipe. One thing to keep in mind: If your intent is to protect your house from water, construct the trench four to six feet away from the foundation. The trench will surround the home, in most cases, in a U shape.

3. Dig the trench bearing in mind the slope. A trench digger is a good option, as it will have minimal impact on the surrounding grade. There are attachments made for bobcats, or you can rent from an equipment-supply company. The trench can be a foot wide or three feet wide, depending on how much water you need to move. Bear in mind that the wider the trench, the more gravel you'll need. Eighteen inches in depth is a good starting point. That should keep it above most services.

4. Install a bed of gravel two inches thick to serve as a base for the drainage tile.

5. Lay the drainage tile keeping in mind the slope. Perforated pipe should be laid with the perforations down. This will prevent fine soils from entering and clogging the pipe. Even better, use fabric-wrapped pipe, which is easier to use than installing filter fabrics.

6. Fill the trench with gravel, level to the surrounding grade. If you're not using fabric-wrapped pipe, install a filter fabric above the pipe, embedded in gravel. Some people use landscaping gravel, which comes in a variety of colours, to enhance the landscaping on the top six inches.

FNNBOA Membership Form

Current Home Mailing Address	
First Name	
Middle Name	
Last Name	
Suffix (e.g. Jr. Sr.)	
E-mail address	
Address	
City or Town	
Province	
Postal Code	
Home Telephone	
Office/Business Mailing Address	
Contact First Name	
Contact Middle Name	
Contact Last Name	
Suffix (e.g. Jr. Sr.)	
E-Mail Address	
Company Name	
Address	
City or Town	
Province	
Postal Code	
Office Telephone	
Office Fax	
Type of Membership	
<input type="checkbox"/> Full (\$100/yr plus a one-time \$50 Initiation Fee)	
<input type="checkbox"/> Associate (\$250/yr)	
<input type="checkbox"/> Corporate (\$500/yr) - includes 5 memberships	
<input type="checkbox"/> Student-Internship and Mentorship (\$50/yr)	
Mail your cheque to:	
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