

# MCAABC

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## Plumbing & Mechanical

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**Publisher:** Michael Bell

**Editor:** Jeanne Fronda

**Sales Manager:** Sharon Komoski

**Sales Executives:** Gary Fustey,  
Nolan Ackman, John Pashko,  
Pat Johnston, Peter Gabriel

**Production Team Leader**  
Adrienne N. Wilson

**Senior Graphic Design Specialist**  
James T. Mitchell

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**President:**  
Kevin Brown

**Senior Vice President:**  
Robert Thompson

**Branch Manager:**  
Nancie Privé

Please Return Undeliverable Copies To:

**Mechanical Contractors Association of B.C. (MCABC)**  
#223 3989 Henning Drive  
Burnaby, BC, Canada  
V5C 6N5  
Phone: 604-205-5058  
Toll-Free: 1-800-663-8473  
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As I write this, Canada just won the GOLD medal in men's hockey at the Olympics and set a new record for the most gold medals ever won at a Winter Olympics Games. It's hard not to be patriotic when red and white maple leaf flags are waving around the province and chants of "Canada, Canada" can be heard throughout the streets of Vancouver — even late at night when most of us are usually sleeping, the festivities carry on well into the early morning hours.

There's no denying the 2010 Olympic and Paralympic Winter Games have catapulted British Columbia into the world spotlight and is giving the general economy a big boost. But what is it doing for construction and our members?

The Mechanical Contractors Association of British Columbia is looking at 2010 with some reservation, but also a lot of optimism. British Columbia's economy is stabilizing from the recession and is expected to grow 2.9 per cent in 2010, partly due to the effects of the 2010 Olympic and Paralympic Winter Games.

As we look at the profile the 2010 Winter Games will bring, we are being reassured by the media and the government that the economic forecast for the year remains steady. However, it might actually take an entire year for Vancouver area contractors and service providers to recover from an Olympic lockout, which has left many of them unable to complete or service jobs in the Olympic Games areas of the city.

We've heard that some of our contractors have had to walk away from Vancouver-area construction projects and won't be expected to pick them up again until the aftermath of the Games is long over. Meanwhile, there are associate members who have warehouses of product sitting and waiting for customers.

Many of these shut-out members were originally forecasting a recovery as early as the second business quarter, but now we're hearing as long as the entire year.

Other major cities in British Columbia have been particularly hard hit by the economic downturn. Some of Canada's largest house price drops, year over year, and housing start declines have occurred in the province and the province's unemployment rate has also risen.

According to BC Stats, unemployment in the province has risen three points since last year's report and currently sits at 8.1 per cent up from 5.1 per cent in 2009. Some areas, such as the Cariboo Region, have been hit with 12 per cent unemployment, with Prince George being the hardest hit city at 12.9 per cent. Last year, experts were only predicting an unemployment peak at seven per cent, so things might not be as rosy as some have been initially painting.

Nevertheless, the province's unemployment rate is still slightly lower than the national average of 8.3 per cent, which has increased 35 per cent since October 2008. B.C. shows a stronger economy than the Maritimes provinces, Newfoundland and Ontario, which report as high as 14.9 per cent unemployment rates, but the province doesn't come close to the booming Prairie provinces, where Saskatchewan shows a low 4.7 per cent rate.

On the positive side, the number of B.C. housing starts continued to rise for a third consecutive month, increasing 20 per cent in January 2010 from the number of housing starts in December 2009, according to data by the Canadian Mortgage and Housing Corp. Total starts rose to 24,800 units from 20,700 in December and 17,500 in November. The largest increases were in Surrey, Metro Vancouver, Victoria, Kelowna and Abbotsford.

Nineteen major projects started construction in the third quarter of 2009, with an estimated value of approximately \$0.9 billion. The largest project started was the \$150-million Beasley Residential Tower in Vancouver, followed by the \$141-million Okanagan Transmission Reinforcement project in the Kelowna area.



**Andrew Wong**  
*President, MCA British Columbia*

Thirty-three projects completed construction in the third quarter, with an estimated capital cost of approximately \$3.8 billion, the largest being the \$2-billion Canada Line and the \$500-million Coopers Quay Residential Development in Vancouver.

The capital cost of all major projects currently under construction in B.C. is estimated at \$63.1 billion, down from \$66 billion reported in the second quarter of 2009. Many major project proposals listed are in very preliminary stages and are not approved for construction, therefore capital cost estimates should be viewed with caution. The available capital cost of proposed projects is estimated at approximately \$106.7 billion, up from \$102.3 billion in the previous quarter.

According to the Ministry of Small Business, Technology and Economic Development approximately \$19.2 billion of projects are judged to be 'on hold' for the time being.

So as we proceed towards the second quarter of 2010 with some caution, there are some positives that are happening along the way, to counteract some of the negatives. Hopefully in 20 years we can look back at the 2010 Olympics and remember the rewards that were reaped, rather than the turmoil it has caused some of our mechanical contractors.



**Dana Taylor**  
*Executive Vice President,  
MCA British Columbia*

In the 20 years I've been kicking around this trade association there's no one emerging concept that states the obvious more clearly to me than Mechanical Contracting EQUALS Green Building.

Going green gets us out of the closet... from behind the mechanical room door into the open for all to witness and — most importantly — to better understand.

Green buildings — everybody gets it — it's now up to the mechanical contractors who earn a living from this business to drive it home. In the area of green building design, energy conservation and promoting and building efficient life cycle structures the mechanical sector and mechanical contractor associations in particular need an “own the podium” campaign.

Green buildings are our business and we are growing our own outspoken advocates, says Taylor. David Kruse in Berkeley, Calif., is one of those guys who demonstrate what green building is all about. His company JL Kruse Mechanical is a living artifact of these systems. Their place of business shows the world what mechanical contractors build, and his building operations records document the building's performance that translate into energy and thus dollar savings.

David ‘walks the walk.’ A founding member of the Green Chamber of Commerce, he upholds the models of tomorrow's business. When he says the term green building is transient he means the term itself will disappear as what he does becomes the norm. Implicit in that assumption is that those ‘...not on board this train’ will be left on the platform.

Sean Penrith of the Earth Advantage Institute says that green building has been a bright spot in an otherwise lacklustre year. In his top 10 trends for this year, he says 2010 will bring about some new trends including the smart grid home, which includes web-based real-time energy use records; energy labelling for homes; Building Information Modelling (BIM) software used to predict building performance; and a more open arm from lenders and insurers for green homes and buildings. He also predicts that larger homes will no longer be a trend in a new “rightsizing of homes” approach that will

start to take shape.

With the 2010 Winter Olympics most Canadians have heard of the ‘own the podium’ campaign whereby a focused effort was made to have Canada's athletes dominate or at least loom large in the medals count at the 2010 Games.

The Mechanical Contractors Association of BC — indeed mechanical contractors associations everywhere — have opportunities, given the emerging technologies, to grab all the key elements of the green building environment. Our partners in this endeavour are or should be electrical contractors. Both of these specialty groups are ‘green buildings.’

Buildings have an enormous influence on many environmental issues. According to the Commission for Environmental Cooperation, buildings in Canada consume 50 per cent of our natural resources, 22 per cent of all energy used and contribute to a quarter of our landfill waste.

Buildings not only consume energy and water, but they use up other valuable resources, fill up landfills, and pave over natural areas. Building more efficient homes saves us money in the long run, protects our health, preserves our natural environment and decreases our contributions to global warming.

And whatever your specialty within the mechanical system, be it plumbing, radiant heating, HVAC, fire protection, boiler installations and retrofit, water filtration, sewage, drainage and irrigation, it's all connected to environmental system design.

In an age where Building Information Modelling (BIM) will form a growing part of both new and renovated building construction, and where the dictates from the purchaser increasingly will be ‘Build it to last and operate efficiently’ our role as mechanical contractors will be to “Own the Building Works.” Design it, specify it, build it, service it — you can bet someone will. It's my job — no make that our job — to make sure there's an MCA sticker on it when it happens.



Photos by Dean Battaglia

# Royal Jubilee Hospital

By Andrea Danelak

Its name commemorating the Golden Jubilee of Queen Victoria in 1887, the Royal Jubilee Hospital in Victoria is expansive, offering critical care, surgery, diagnostics, emergency facilities and other patient programs to British Columbians. In 2007, the provincial government announced that it would expand and renovate the hospital.

Funded by the province, the Vancouver Island Health Authority (VIHA) and the Capital Regional Hospital District, the new hospital will have capacity for up to 500 beds and will replace approximately 400 beds currently in older buildings on the hospital's campus, as well as some of its aging buildings themselves.

At the end of November, the final steel beam connecting the hospital's new state-of-the-art Patient Care Centre to the existing Diagnostic and Treatment Centre was welded into place. So far, the centre, on which construction began in July 2008, is on schedule for its estimated December 2010 completion date, with occupancy expected as early as February 2011.

With a total project capital cost of almost \$350 million, the new hospital is a public-private partnership between VIHA and ISL Health (Victoria)

General Partnership, which was selected during the P3 fixed-price procurement process. According to a Partnerships British Columbia report on the hospital, the P3 delivery model is designed to capture the strengths of both the public and private sectors, providing better value for taxpayers' dollars.

The hospital, however, has elected to use parts assembled in the United States for a significant portion of the project, effectively shutting out several

MCABC associates and making the issue a sensitive topic for many given the project's use of local taxpayer dollars. Concerns over the out-of-province purchases have been raised, specifically about their potential to undermine the local economy by eliminating many local sales commissions and labour and translating into lost wages, which could further translate into a loss of tax revenue to buy infrastructure in the future.

"A lot of trades lost out on this



opportunity,” says Rob Newmarch, MCABC associates chairman and a partner in Hy-Line Sales Limited, which represents and distributes plumbing and architectural products to wholesale distributors in the B.C. marketplace. “It’s a pretty substantial loss.”

Newmarch’s company had already started on its plans for the hospital when the decision to bypass local companies in favour of ones further south came into play. “We estimated it and did the mock-ups and then didn’t end up supplying anything,” he says. “The next thing we know, we find out [American company] Eggrock was getting the project.”

A manufacturer that produces ready-to-install bathrooms for multi-unit construction projects like hotels, student housing, military barracks and hospitals, Eggrock won the contract to provide the bathrooms for the hospital in 2009. Eggrock bathrooms are delivered to construction sites complete, pre-tested and fully equipped, with everything already in place, affecting several trades who would have otherwise worked on the project.

Because the bathrooms for the hospital were imported complete, the effects on the local industry were far-reaching. “It’s more than just the plumbing side of it,” says Newmarch. “Framing, flooring – a lot of trades got shut out of this.” He adds that the hospital, whose contractor is Victoria-based Campbell Construction, has used some components supplied by Canadian companies, but “the major portion, that’s all from the United States. All of the materials were assembled in the U.S. and then transported to Canada.”

Newmarch suspects the choice to buy American most likely stemmed from the costs of the project. “It was probably cheaper to buy out of the U.S. than to do it with Canadian labour and Canadian material,” he says. “But they’re taking away a lot of jobs and a lot from us, in terms of that labour and material.” In addition to the blow to the local labour market, the lack of assemblers in B.C. could also have an impact on skilled trades in the future – if projects of the hospital’s magnitude continue to bypass local companies, it could eventually lead to a deskilled industry.

Tony Testini, western Canadian regional sales manager for American Standard Canada, a manufacturer of bath and kitchen products, agrees the decision could have been sparked by cost but may eventually backfire, as “they will probably find out that there are some hidden costs and inconveniences that they did not foresee. It may not be as big of an advantage as they first thought.”

For now, associate members may be worried about the outcome the hospital’s decision will have on the local

economy, but both Newmarch and Testini remain optimistic. “There is no evidence of this trend continuing,” says Testini. Adds Newmarch, “There are a few more hospitals coming up in B.C., and they are all going with local representation.”

But that does not diminish the effects already felt by some. “Some of the associates really lost out on a fairly substantial project. To lose a project to the States, we’ve never had that happen before,” says Newmarch.

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# 2009 Year End Tax Planning Considerations

By Corrinna D. Pensa-Mayer

## Worth a Look

With the holiday season over, it's a sure sign that annual tax time is just around the corner! And while we all know tax planning should be a year-round process, special attention to various tax issues, in advance of 2009 taxation year-end, are well worth a look. Depending on your particular situation they can reduce your tax liability both personally and corporately. Review your options for common tax planning ideas and items today and situate yourself nicely for 2010 considerations as well.

### Split your Income

A common avenue in personal planning opportunities is considering the possibilities of structuring your affairs to reduce your taxable income. Where possible, income splitting can move income into the hands of a lower-income family member who pays less tax. Also a spousal RRSP allows a higher income spouse to contribute to the RRSP of a lower income spouse.

At retirement, this can help shift more income to the spouse who is expected to be in a lower tax bracket. A spousal loan is another strategy for income splitting. As long as the prescribed rate of interest is paid, a spousal loan can be an effective way to transfer assets from a spouse in a higher tax bracket to a spouse in a lower tax bracket. The pension income splitting measure introduced by the government allows the higher income-earning spouse

to allocate up to 50 per cent of their pension income to their lower income-earning spouse where it would be taxed at their lower marginal rate. Specific rules apply.

### Year End - Tax Loss Selling

As we approach the end of the 2009 personal taxation year, it is time to review your portfolio in an effort to identify positions currently trading at a loss. Selling securities and/or mutual fund units for less than the cost at which they were acquired will generate a capital loss that may be used to offset taxable gains in the following years. Tax loss selling to crystallize unrealized capital losses can be of benefit for Carry Backs – investors may carry back losses to one of the previous three years to offset any capital gains in those years and cover some of the taxes already paid. Carry Forwards – investors may carry forward losses indefinitely to offset capital gains generated in the future. And from a tactical investment approach switching to a temporary basis sector ETF will enable you to maintain exposure to the industry. Following a 30-day calendar period your intention may be to buy-back your former positions at which time you may. Be aware, depending on how your account is set-up (transactional or fee-based) and/or the loads applied to your mutual funds will decide the viability for this tax planning approach.

## Donate Securities

If you are considering a charitable donation, consider donating your publicly traded securities such as stocks, trust units, exchange-traded funds, warrants etc., as well as mutual funds units and bonds to public charity. Capital gains tax is eliminated from the gift.

## Exhaust your Tax-Free Savings Limits

If you've exhausted your RRSP limits, a Tax Free Savings Account is a great option to never pay tax on any income generated from investments in this account. And if you missed out on 2009 not to worry — on Jan. 1, 2010, you may deposit \$10,000 per person, 18 years and older, who reside in your family household.

Withdrawals from a TFSA are tax-free anytime and you may re-contribute for past and/or current yearly amounts as this is an annual accumulative account.

## Create deductible Debt

Tax-deductible loan interest can be a great tax-saver. One strategy is to convert all or part of your mortgage debt into an investment or business loan. You can sell some investments to pay off your mortgage, and then take a loan to repurchase the investments. This will effectively replace your non-deductible mortgage debt with a deductible investment loan.

## Maximize your RRSP

The Registered Plan contribution deadline is March 1, 2010. Keep in mind the annual contribution is the lesser of 18 per cent of 2008 earned income up to a maximum of \$21,000, less the Pension Adjustment for 2008. You may also have an unused allowable amount from prior years and over-contribute by \$2,000 max. (Anything over and above one per cent per month penalty will apply). Dollar-for-dollar these amounts can save you not only on your federal tax but provincial tax rate too, as it reduces your taxable income and can apply to each member of your family household. The tax savings can be significant.

## Consider an RESP

For your child or grandchild consider a Registered Education Savings Plan. RESP's must be contributed to no later than December 31 to maximize the income deferred and benefit from the Canada Education Savings Grant. CESG is 20 per cent of your contribution to a maximum of \$500 per year if the beneficiary is under 18. The

lifetime grant limit is \$7,200. If you are saving for more than one child, consider the benefits of a family plan rather than individual.

## Turning 71 in 2009?

RRSPs must be terminated to avoid full taxation and conversion to a RRIF or Annuity by December 31 is required.

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## Personal payments and putting it all together:

Final tax instalment payments for 2009 are fast approaching on December 15 and IF your instalment interest charges are more than \$1,000, an alternative calculation is required. Interest on intra-family loans must be paid by Jan. 30, 2010, to avoid income attribution rules. As the current federal prescribed rate is low at one per cent, you may want to consider new arrangements going-forward.

Charitable donation payments must be made before the end of the year. The maximum annual claim is 75 per cent of net income. Unused amounts can be carried forward for five years. Eligible medical expenses can be claimed for any 12-month period ending in the calendar year. Only amounts in excess of the lesser of three per cent and \$2,011 are eligible. A reminder for parents of children under the age of 16, who are entitled to a non-refundable tax credit of up to \$500 for each child registered in an eligible program of physical activity. There's also a credit issued for the cost of public transit passes provided certain conditions are met. And let's not forget about the new Home Renovation Tax Credit (HRTC) where eligible expenses include improvements to your house, condo or cottage. It may be claimed on your 2009 income tax

return and applies to eligible purchases between Jan. 27, 2009, to Feb. 1, 2010. Other payments due for December 31 when considering your 2009 tax return include: Loan interest, Safety Deposit Box, Alimony/maintenance, Political Contributions, Moving Expenses, Tuition Fees, Child Care, Professional Fees, and Review Family Trusts for any action required by Dec. 31, 2009.

## Make the right decisions all year

Tax Planning means that you are entitled to arrange your affairs, within the limits of law, so that you pay a minimum amount of tax. These points are general and brief and not applicable to all situations. Consult with your tax and wealth adviser to determine if implementation is relevant and prudent for your specific circumstances. Remember Tax Planning is not only a vital component of the financial planning process but an integral part of managing your wealth.

## Employers – Are you ready for 2010?

It's time to start your tax planning for NEXT year! Employers should ensure they include a copy of the new TD1 forms to all employees with their year-end paycheques in order that the correct source deductions are deducted for 2010.

Form TD1, Personal Tax Credits Return, is completed by employees and provided to their employers. The forms are used by the employer to determine the amount of federal and provincial or territorial tax that is to be deducted or withheld from the employee's employment income. Employees will normally complete a Federal TD1 plus a TD1 for the province or territory of employment.

The Federal TD1 has been revised to include the increased non-refundable tax credits available to taxpayers at the end of the year. The basic personal amount and spousal amount have now been increased to \$10,382 and the amount that may be claimed for every child born in 1993 or later will be \$2,101. For a link to the CRA website and the updated Federal and Provincial TD1's click <http://www.cra-arc.gc.ca/formspubs/frms/td1-eng.html>

Form T1213 is to be completed by taxpayers when requesting reduced tax deductions at source for deductions or non-refundable tax credits that don't appear on Form TD1, Personal Tax Credits Return.

For example, if there are registered retirement savings plan (RRSP) contributions being made outside of contributions made through your employer, or there are support payments made and tax deductions at source should be lowered due to these deductions, it is appropriate for a taxpayer to use Form T1213 to request reduced tax deductions at source for the tax year.

For a copy of Form T1213, visit <http://www.cra-arc.gc.ca/E/pbg/tf/t1213/t1213-04e.pdf>

*Corrinna D. Pensa-Mayer is a Wealth Adviser with ScotiaMcLeod and specializes in helping investors protect, maximize and transfer wealth through trusted advice and a holistic approach.*

*This article is for information purposes only. It is recommended that individuals consult with their own tax adviser before acting on any information contained in this article.*

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# Infrastructure spending vital to Canada's economic recovery

By Mike Geoghegan



As anyone who has travelled any significant portion of the Trans Canada Highway knows, we have a significant infrastructure deficit in this country. Our national highway is a national disgrace, but Canada's infrastructure is not just roads and bridges; it is buildings, sewer systems, waterlines and electrical transmission grids.

It is also our military that we call upon in times of crises, such as the recent massive quake in Haiti, to ensure the sovereignty of Canada, which is second only to Russia in size, and to meet our international obligations such as in Afghanistan.

Our economic growth depends on this vital infrastructure and on the skilled trades people that build and maintain it. According to Statistics Canada, in the province of British Columbia, the average age of a skilled tradesperson is now over 50. If we are going to retain a skilled workforce then we need to ensure the apprentices that were hired during the last construction boom are still able to complete their apprenticeships.

In 2009, the Government of Canada announced a \$40-billion procurement for the construction of new naval and coastguard vessels. Such construction is long overdue, as the last of our navy ships were built in the 1980s.

When it comes to federal ship procurement, British Columbia has some bitter memories. The last-minute cancellation of the Polar 8 in the early 1990s led directly to the closure of a major shipyard in North Vancouver. Add to that the political games that have been played by both BC NDP and BC Liberal governments with regards to the construction of BC Ferries, and it is a wonder that we still have a significant shipbuilding industry here in B.C.

But the fact is that we do, and in the 21st century the key ocean trading routes will not be between North America and Europe — and they were for the last 200 years — they will instead be between North America and Asia.

That means that as Canada's gateway to the Pacific, British Columbia needs to have the ability to repair large merchant and naval vessels. That capability will only exist if B.C. gets the

go-ahead to build a significant portion of Canada's new navy and coastguard fleet.

With an equitable portion of federal ship construction, private companies would then be in a position to also improve their own facilities. This in turn would enable them to get back to the business of building and repairing the BC Ferry fleet right here in British Columbia.

By once again having a thriving shipbuilding and repair industry it will also increase the pool of skilled tradespeople who are living on Vancouver Island and the Lower Mainland. This then becomes of critical importance when inevitably we hit the next construction boom.

The final reason for spending money on infrastructure is environmental. The better our national highway system, the more efficiently goods can be shipped and the less fuel that is wasted. Similarly, an electrical transmission grid that went across Canada rather than just south into the United States would allow utilities to shift power as electrical demand rises and falls during the course of the day across Canada's five time zones.

An east-west transmission grid would also make it much more viable for wind power and other green energy projects to make a significant contribution to meeting our nation's energy needs. And when it comes to conservation, the upgrading or replacement of old public buildings so that they are now properly insulated, ventilated and energy efficient would also result in tremendous energy savings.

So too of course does the upgrading of water and sewer systems so that less water is wasted to leakage, less energy is used and energy is even generated from new sewage treatment facilities.

All this and more are reasons why Canada needs to keep spending money on infrastructure now when our economy is still struggling to recover and not when the next private sector construction boom hits.

*Mike Geoghegan is a federally and provincially registered lobbyist who lives in Victoria, B.C. He can be reached via his website at [www.mgcltd.ca](http://www.mgcltd.ca)*

# Will the Olympics Kick Start a Construction Boom?

By Lisa Kopochinski

Government recognizes importance of infrastructure spending, but the need for skilled apprentices remains greater than ever

Photo © VANOC/COVAN

Canada, and British Columbia in particular, couldn't have asked for a better opportunity to showcase itself with the global coverage of the Winter Olympics. While Vancouver basks in the afterglow, the question now is will we see a badly needed construction boom?

"The short answer is yes," says Mike Geoghegan, MCABC's government relations consultant. "It may take awhile as the world economy recovers, but there are already signs of increased construction in the housing sector that will carry over to the commercial sector as well."

With respect to infrastructure spending, Geoghegan is pleased that the federal and provincial governments recognize its profound importance and says, "The problem we're having is that all too often when government thinks infrastructure, it thinks roads and bridges. That's only part of the equation. Water infrastructure, sewer lines — that's not only important in terms of economic development, it's also important in terms of environmental health."

He adds that one of the things the Olympics accomplished — as did Expo '86 and the Commonwealth Games — "is give government permission to build things that should have, frankly, been built anyway, such as the Vancouver Convention Centre, upgrading the Sea to Sky Highway, and the Skytrain to the airport."

The facilities built for the Olympics, particularly the new ski and sliding venues, the Olympic Oval and the Canada Line, will also allow the Lower Mainland to host other large events, which in turn could provide a boost to the construction industry.

"As an association, MCABC is always very positive about these sorts of events because we know that's when government turns on the taps. But what government also has to address in terms of infrastructure spending is this pattern of feast and famine."

He cites defence spending as a classic example. If the construction of both ferries and naval ships would continue

at an even pace, this would create steady employment for plumbers, pipefitters, welders, sheet metal workers and electricians, for example.

## Future supply concerns

It is also vital right now that apprentices be fully trained and certified, particularly since the average age of a certified trades person in B.C. is approaching 55. But Geoghegan remains proud of the fact that the MCABC has led the charge in terms of creating an apprenticeship training task credit in order to encourage more firms take the time, trouble and expense of training apprentices.

However, a major problem remains. “We were in a construction boom, apprentices were being hired and trained, and bang, now with the recession those young apprentices have been laid off at exactly the wrong time,” Geoghegan explains. “That’s why things such as government infrastructure spending is so critical. The more young apprentices we can keep in place will mean they are available to work in the next construction boom. Otherwise we are going to have a bunch of retired trades people. Then the next boom comes along and construction costs are going to be out of this world because there will be so few certified trades people available.”

Dean Loewen, North Island manager of Victoria-based West Bay Mechanical, certainly sees this as a problem, especially in the next five to 10 years. While he thinks the current training programs are doing a good job, there isn’t enough interest.

“Where we need to get as productive as possible is recommending people for trades,” he suggests. “Being a plumber is not just cleaning toilets. There are many more angles you can do. I don’t think that’s taught in schools.”

Brian Bradshaw, vice president of Altac Services in Port Moody, says another aspect of the problem is that many young workers who enter the trades don’t possess the necessary work ethic.

“The work ethic is probably more important than the technical skills. Most of them come in expecting they have the right to the job. I’ll go through 10 guys before I find the one kid who has grown up.”

## Open for Business

There is little doubt that the Olympics were the kick in the pants needed to jumpstart things again.

“If you want an amazing city with an amazing lifestyle, this is the place to do business,” says Geoghegan. “We are expecting that when the world comes out of its recession, Vancouver will continue on its trajectory to becoming one of the golden global cities. It will be mentioned in the same breath as San Francisco and others of that ilk.”

Those migrating to the area, and who will continue to do so, will come from different areas of the globe. For instance, wealthy Canadians, tired of shovelling snow and swatting mosquitoes, will find Vancouver, the Lower Mainland and the Okanagan Valley especially appealing.

And with Vancouver being Canada’s gateway to the Pacific, there’s a migration from Asia — most notably the powerhouse economies of China and India.

A large demographic challenge still looms. “How do we ensure that young couples, who want to have children, can afford family housing?” Geoghegan asks. “In terms of natural growth, about the only sector of Canadian society where we’re seeing any kind of significant population growth is amongst indigenous Canadians. And that was also reflected in the Olympics with the significant role played by the four-host indigenous nations. It’s an interesting dynamic in terms of what’s happening in the population and its mix.”

From his government relations perspective, Geoghegan remains optimistic for the mechanical trades, especially after jobs and growth were stressed as a top priority in the recent Throne Speech. (The speech marks the start of a new Parliamentary sitting and summarizes the government’s future intentions).

“We’re pleased that the budgets of both the provincial and federal governments have recognized the importance of infrastructure spending. And we’re very enthused about the Olympics, not only for the infrastructure that was spent, but the fact that it will lead to more in the way of economic development.”




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# The Future of GREEN BUILDING is Now

By Lisa  
Kopochinski



Photo: Cannon Design

## The benefits of environmentally friendly building to the construction industry is clear

**G**reen building is here to stay. And what a difference a few years makes. It wasn't too long ago that some considered green building to be a passing trend, but interest by the government, environmental groups and the public is definitely on the upswing. The construction industry is also jumping on board — albeit more slowly — as more general contractors employ Leadership in Energy and Environmental Design (LEED) coordinators to help in estimating work and educate their subtrades.

“The train has left the station on this one,” says Dave Kruse, president of L.J. Kruse Company in Berkeley, Calif., and a past president of the Mechanical Contractors Association (MCA) of America. “In the not-too-distant future, the term green building won't exist because all design and construction will conform to what we now call green building. We see more and more contractors getting on board because their customers and clients — owners, developers — are demanding it.”

Dana Taylor, executive vice president of the Mechanical Contractors Association of British Columbia (MCABC), concurs: “We are witnessing a growing awareness as evidenced by greater attendance at demonstrations and seminars on green building and expanded memberships in such organizations as the Canadian and U.S. Green Building Councils. Some companies have incorporated everything from wholesale company strategies to employing marketing tactics that identify the mechanical contractor as a green building expert.”

### History of Green Building

Green building or sustainable development is nothing new. With its aim to reduce the environmental impact of buildings, green building can be traced to the energy crisis and the environment pollution concern in the 1970s. The green building movement, which combines numerous practices and techniques to reduce the impact of buildings on the environment and human health, originated from the need and desire for more energy efficient and environmentally friendly construction practices.

And while everything points to green building as being a positive thing, there is still some hesitancy on the part of contractors to jump in with both feet.

“Perhaps there might be an initial perception of an added cost of doing business and insufficient demand,” says Taylor, “but it is noteworthy that both green building councils have research that suggests huge volumes of work in both new construction and retrofits in the U.S. and Canada. And public buyers of construction are increasingly mandated to build green.”

Peter Hughes, principal of Stantec, a Vancouver firm that offers services in architecture, planning, engineering, interior design, project management, and much more, says many contractors still lack knowledge about the requirement of LEED documentation.

“Although all of these requirements are articulated in our specifications, contractors coming to this for the first time overestimate the amount of extra work required because of the unknown.”

Once they have done a couple of projects they will have the processes in place to streamline the requirements. And once they are comfortable with the process, estimated pricing tends to come down.”

## Does Green Building Equal Higher Costs?

There is also the perception that green building is more expensive than traditional construction. Not so, says Kruse.

“This is really a myth. To use basic green practices, and to get the basic level of LEED certification, should not cost more for a new building. Now, if you are attempting gold or platinum, you will spend more as an owner, but the lifecycle savings are enormous.”

Mike Ohlman, vice president and general manager with Fred Welsh Ltd., a mechanical contracting company in Vancouver, says costs are higher for green building, particularly from a mechanical perspective. “However, costs depend on system strategies. On average, I would figure 15 per cent to 20 per cent premium to incorporate strategies.”

Andrew Wong, G.S.C., vice president/construction manager of Alpha Mechanical Contracting Ltd. in Vancouver, agrees that green building is more expensive and that the current economy is looking for the low bid. “Also, the additional logistics associated with green designs and a lack of clarity around those issues will consume valuable time to estimate/design the projects. Estimating time is extremely valuable to all contractors at this time as most are bidding a lot of projects.”

Hughes says the cost debate is always there, but adds that “the accepted numbers for a LEED silver building is a premium of 0.5 per cent to two per cent, and LEED gold up to five per cent of the initial capital costs depending on the building and credits pursued. There are studies to indicate that when LEED is part of the original design brief, a LEED building can be built within the cost range of buildings of a similar type.”

This cost can often be mitigated through an effective integrated process that includes a design where all stakeholders

work together to make decisions before the construction documents are started. “You also need to take a lifecycle costing approach, as many of the initial investments will pay back very quickly once the building is occupied and operational — i.e., lower utility costs,” he says.

## Vancouver and Richmond Top the Green List

Two examples of recent projects that utilized green building principles are the Vancouver Convention Centre Expansion Project and the Richmond Olympic Oval.

As one of Canada’s largest convention centres, the new West Building opened last April — after five years of planning and building — and is truly a model of sustainability, particularly for a civic building of this stature and size. Owned by the BC Pavillion Corporation, the expansion spans nearly 500,000 square feet over land and water and features a green roof that acts as an insulator. It was landscaped with thousands of indigenous plants and grasses and provides a habitat for birds and small mammals.

Alpha Mechanical Contracting did the plumbing work, which included the non-potable water supply that irrigates the green roof, while Fred Welsh Ltd. installed all mechanical/HVAC equipment and systems with wastewater/desalination plants.

“The focal mechanical system considered as green would be the reclaim of sanitary services and treatment, thereof, which is then distributed through a non-potable water system service water closets, urinals and irrigation for the seven-acre living roof,” explains Ohlman. “Incorporating radiant heat/cool slab piping was able to reduce total plant capacities by 20 per cent.”

Stantec served as consultant for program and project management, mechanical engineering and electrical engineering with Schenke/Bawol Engineering on the nearly \$900-million project, which is on track to achieve LEED Gold certification. It served as the international broadcast and media center for the 2010 Olympics.

The Richmond Oval is another example of a wonderfully sustainable project. Situated in Richmond, beside the Fraser River, the nearly \$200-million facility, which was the venue for speed skating at the Olympics, spans nearly 850,000 square feet and can accommodate 8,000.

Built to LEED’s Silver designation, Stantec’s Hughes says the most significant energy-saving measures are the ventilation heat recovery and variable speed drives on pumps and fans, which has resulted in a 34 per cent reduction in energy use.

“The Oval hall is served by three air-handling systems of 53,000 CFM each,” he explains. The systems are 100 per cent outdoor air systems and are complete with pre-filters, 50 per cent heat recovery coil, 85 per cent efficient bag filters, dessicant wheel de-humidification, cooling coil, heating coil, and supply fan. Each system has a pair of axial return fans to maintain 17°C during competition with spectators.”

Other features of energy efficiency include DHW preheat where heat rejected from the ice refrigeration plant is used to preheat domestic hot water. The energy recovered represents only one per cent of the heat available for reclaim and 21 per cent of total DHW heating energy. Estimated savings are 81 MBTU/year.

“As well,” Hughes adds, “low temperature water from the cooling tower is used to cool ventilation air during swing seasons with a savings estimate of 317 MBTU/year. And an earth tube provides outdoor air preheating and precooling for a savings of 82 MBTU/year, while a heat pump with a capacity of 675,000 BTU/hour preheats outdoor air which is used to condition a dehumidification dessicant wheel on AHU-2.”

## The Future

Clearly, the benefits of green building to society and the environment are evident. Kruse sums it up best. “We have limited natural resources. Changing the way we design and build our buildings can reduce our dependence on foreign energy and help ensure our freedom. Healthy buildings make for healthy occupants, and we all can live with that!”



# A Truly National Plumbing Code Has Been Virtually Achieved

## 2010 Cycle Sees Few Changes

By Lisa Kopochinski

There were more amendments made to the 1995 National Plumbing Code (NPC) during the code cycle that resulted in the 2005 NPC than in any other cycle. While the amendments were to the prescriptive code, a new section — an objective-based code — was also added.

“If a plumbing system is designed to the objective-based section, it must be proven to the plumbing official that it meets the minimum requirements of the prescriptive code and be signed and sealed by a P. ENG.,” explains John Masse, a retired instructor who was a member of the Standing Committee on Building and Plumbing Systems (SCBPS).

The amendments were spearheaded by the British Columbia Plumbing Industry Task Force (PITF), which is co-ordinated and supported by MCABC. PITF proposed the vast majority of proposed changes discussed by the (SCBPS). The majority of PITF-proposed code changes were accepted by the SCBPS for the 2005 NPC. (See sidebar box).

SCBPS is completely responsible for the technical content of the code, and not the National Research Council. NRC plays the role of a neutral facilitator to manage the process of producing the codes as a service to Canada.

### Minimal Amendments for 2010

For the 2010 edition of the NPC, few changes were required.

“There’s one major amendment and that is the water pipe sizing,” says Gord Jensen, who recently replaced Masse on the SCBPS. “The method and procedures for water pipe sizing is changing to a velocity-based sizing method, which is similar to what we had in B.C. since 1992. The national sizing method for water pipe sizing has been outdated for many years and had few restrictions. The tables in the code permitted higher water velocities, which have been found to contribute to premature piping and fitting failures in some water systems.”

Jensen adds that water conservation restrictions have also been put in place on the outlet flows of many fixtures. This will now be reflected in revised hydraulic load values for fixtures. “It all boils down to lower water system velocities resulting in less system noise and improved longevity for water systems.”

### SCBPS Task Groups

In amending the 1995 NPC, Masse says that four task groups were struck by the SCBPS. “A task group is appointed by the SCBPS and agrees to the membership and terms of reference for the task group. Once appointed, the task group works independently to come up with recommendations for review by SCBPS.”

He adds that the chair of the task group must be a SCBPS member. The remaining members are selected based on technical merit and knowledge of the subject being discussed. The task group reports to the SCBPS, which can accept, reject or modify the recommendations of the task group.

“The most significant recommendation made by the task group was to harmonize the venting requirements,” says Masse. “The SCBPS unanimously accepted the recommendations of the task group. This is of great significance, considering the fact that three other task groups since the early 1970s tried to do the same thing with no success.”

A task group to develop a User’s Guide for the 1995 NPC completed its work and made recommendations to SCBPS, which were accepted. Additionally, a task group to harmonize conflicts between CSA B64.10 and NPC requirements for backflow prevention completed its work and its recommendations were



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## The Role of the SCBPS

The Standing Committee on Building and Plumbing Services (SCBPS) prepares recommendations for requirements for building services in the National Model Construction Code Documents relating to heating, ventilating and air-conditioning systems as well as plumbing systems. Its responsibilities are as follows:

Review proposals for code changes to Parts 6 and 7 of the National Building Code (NBC) and the National Plumbing Code (NPC).

Provide assistance and guidance in the development of an objective-based code.

Form task groups to resolve technical issues such as venting harmonization.

Provide direction to the technical advisor to develop code language for Parts 6 and 7 of the code and NPC for review by SCBPS.

Incorporate public comment into the final language for the code wording.

also accepted by SCBPS. And a task group to harmonize water pipe sizing was struck to provide recommendation to SCBPS for the next code cycle. "This work has been completed and the recommendations accepted by SCBPS for inclusion in NPC 2010," says Masse.

An amendment was also made to the 1995 NPC to limit the temperature of hot water supplied to bathtubs and showers to eliminate the potential of scalding and Legionella.

Jensen says that water temperatures were not restricted previously, allowing the user to select a range of settings on the water heater's control dial.

And in 2007, the NRC, as a result of input from PITE, released errata correcting a number of errors in appendixes of NPC 2005.

"There were errors, especially, in the diagrams, but the labelling is now correct and we've filled in where there should have been more explanation," adds Jensen.

## Truly National Code

It is important to note the NPC is a model code and does not become legally enforceable until it is adopted by a province or territory as their plumbing code. This has been done by Yukon Territory and all provinces, except Saskatchewan and Newfoundland.

"Therefore, a truly national code has been virtually achieved," says Masse. There is an agreement now between all territories and provinces to adopt the NPC with minimal changes unique to their region."

Prior to the publication of the 2005 NPC, British Columbia has used the NPC as a model code but with very significant changes. The 2005 NPC was adopted by B.C. with few changes.

Some provinces will adopt the NPC exactly as it is, while others will make revisions unique to that province. The 2010 edition is expected to be published this spring or summer.

"In the past, a year or so after the NPC is issued, the province of B.C. has adopted the national model code, amended it with 'unique to B.C.' provisions, and relabelled it in B.C. code format," says Jensen.

Essentially, Masse sums it all up by saying: "It is the aim and wish of all Canadian code users to have a document that is the same in all provinces. Having a uniform document is of great benefit to all code users, particularly contractors, designers, educators, manufacturers and the public. A truly national code reduces the time for design, construction and enforcement, resulting in major cost savings to the Canadian economy."

This article was prepared with the assistance of John Masse and Gordon Jensen. Masse is a retired instructor who was a member of SCBPS and spent over 25 years developing code language both provincially and nationally. Jensen, who now is a member of SCBPS, recently retired after serving more than 20 years as supervisor of trades inspections for the City of Coquitlam. Jensen continues to strenuously articulate the good advice of PITE.

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