

CANADA'S TOP 10 PASSIVE HOUSE INDUSTRY LEADERS:

Tackling climate change while saving money for clients

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Editor's viewpoint



With the New Year's arrival, we can see a key theme underlying trends in the Canadian design and construction community in several places in this issue of Canadian Design and Construction Report.

Sustainability – managing construction to achieve major energy savings – is a key focus in design and building science. There are good reasons for this focus. Beyond the larger climate change challenges, the economics add up with solid Passive House construction techniques as the payback from reduced energy costs can quickly recover the additional up-front construction investment.

In a couple of weeks, I'll be thinking about global climate issues, as my wife and I set out on a trans-Pacific cruise, ending with visits to Australia and New Zealand. The nearly two-months away from home reflects my longest journey since my much younger days as an expatriate journalist in Africa. Disappearing islands and wildfires in Australia are a far distance from here, but we'll be much closer to these experiences in our journey.

Planning a long-range vacation requires much co-ordination and management, with staff and contractors assuming my roles. Fortunately, the business is going well, especially with the successful launch of Ontario Construction News about eight months ago. I thought then that publishing a daily construction trade newspaper would be a challenge – and it is – but we've learned how to manage things well, so I expect the vacation will go well.

You can still reach me by email at buckshon@cadcr.com when I'm away, as I assign stories for the next issue. I'll do my best to reply to you within a day or two, and assign the matter to another team member in my absence.

Canadian Design & Construction Report Report

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You can contact the editor, Mark Buckshon, at buckshon@cadcr.com or phone 888-627-8717 ext 224. Submissions which provide relevant information on topics of relevance to the design and construction network community are invited. Business and selfpromotional profiles are encouraged to consider the editorial profile or sponsorship options outlined above.

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Constructionmarketingideas.com is the first independent website/blog dedicated to news and developments for marketing in the architectural, engineering and construction communities. Updated frequently, it provides links to dozens of resources and services related to AEC marketing.

The Well takes shape in downtown Toronto

Canadian Design and Construction Report staff writer

EllisDon assistant site superintendent Alberto Robles recently took this image showing construction progress of The Well at Front and Spadina in Toronto, a massive complex on 7.8 acres of land that had formerly been the Globe and Mail's press building.

The mixed-use development will transform the neighbourhood, featuring a variety of retail stores, restaurants, six high rise residential condominium and rental buildings and a commercial office tower.

"It's definitely the largest and most high profile project I've ever worked on," EllisDon senior project manager Jeff Murkar was quoted as saying in an company project profile.

EllisDon is building the commercial office tower, Building G, the largest of

The Well development's towers. This structure on a five-storey podium will rise 39 storeys, which will be primarily commercial office space. The P2 level, ground and second floors will be occupied by retailers, while the 38th floor will be a restaurant, complemented by a roof-top patio.

EllisDon also says it is also building the podium portion of Building F, with 400,000 sq. ft. six levels below ground and six levels above grade. "Upon completion of the podium, EllisDon will turn over a transfer slab to Delterra who will build a 46 storey residential rental building, featuring 613 units, while EllisDon completes the commercial office space below," EllisDon says. "The co-ordination and logistics planning between the coconstruction managers started in 2017 and continues as work progresses onsite." EllisDon worked with the owners and design team to fast-track the procurement process, onboarding concrete, formwork, rebar, curtain wall, elevator, mechanical and electrical trades as the design was still being developed, Murkar was quoted as saying.

"This method of procurement allowed us to secure the key trades ahead of the current surge in the Toronto construction market," he said. "It also allowed us to expedite the start of construction as we worked through the finalization of the design with the consultants and co-ordinated the sequential release of IFC (Issued for Construction) documents to complement our construction schedule."

The buildings are scheduled to be completed in 2021.



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CaGBC describes projects certified under its Zero Carbon Building (ZCB) Standard

By Mark Buckshon and Robin MacLennan Canadian Design and Construction Report staff writers

The Canada Green Building Council (CaGBC) says it is helping eliminate carbon emissions with 10 projects certified under its Zero Carbon Building (ZCB) Standard. These pioneering projects include new and existing offices, schools and warehouses that demonstrate buildings of all types and age can achieve zero carbon emissions.

Introduced two years ago, the ZCB Standard was designed to guide the industry in building to zero and help Canada meet its international emissions targets by 2030. CaGBC's made-in-Canada standard has shifted the green building conversation to focus on carbon as its key performance metric.

A carbon metric recognizes the true climatic impact of a building and brings to light aspects not considered by energy efficiency, including the importance of selecting low-carbon construction materials and energy sources for building operations.

More than 20 projects (including 10 certifications) now registered under the ZCB Standard.

Perhaps the most predominant project is the Joyce Centre for Partnership and Innovation at Mohawk College, the first building to achieve both ZCB Design and Performance certifications. Design certification assures a project has been designed according to zero carbon building requirements while Performance certification demonstrates the project has achieved zero carbon emissions over one year of operation as required by annual verification.

The Joyce Centre design reflects a strong focus on zero-carbon.

"Zero carbon buildings, like The Joyce Centre at Mohawk College, represent a great opportunity for cost-effective emissions reduction. These



projects spur innovation in design, building materials and technology while creating new skills and expertise for tradespeople and professionals," CaGBC president Thomas Mueller said in the statement.

"Owners are also recognizing the benefits a zero-carbon building can bring, including increased resiliency to extreme weather events, meeting occupant expectations for comfort and corporate leadership, and futureproofing against rising carbon costs."

The CaGBC is showcasing ZCBcertified buildings at cagbc.org with videos of early pilot projects, new case studies, and CaGBC research demonstrating both the technical viability and financial feasibility of the standard.

The CaGBC will also be sharing updates to the ZCB Standard early in 2020, as organization releases ZCB v2 to the market. Updates will include feedback from the ZCB pilot projects and will feature more stringent requirements for energy use and embodied carbon.

ZCB-Design certification guides the design of new buildings or the retrofit of existing ones, to reach zero carbon. Here are the Ontario buildings which have received either ZCB-Design or ZCB-Performance certification, or both, in the case of Mohawk College's Joyce Centre Joyce Centre for Partnership and Innovation.

Here's a list of some of the other ZCB projects:

Ontario

evolv1, Waterloo, Ontario

Owner: The Cora Group CaGBC members involved with this project: The Cora Group, Stantec, CFMS-West Consulting Inc., Melloul-Blamey Construction Inc., Vigor Clean Tech, SolarWall, CircuitMeter, and Mitsubishi Electric.

Humber College - Building NX, Toronto, ON

Owner: Humber College CaGBC members involved with this project: BIRD Construction, B+H, Daikin, Humber College, Morrison Hershfield, RDH, and Rockwool,

100 Murray Street, Ottawa

Asset manager: Bentall Kennedy This building received Canada's first ZCB-Performance certification.

CaGBC members involved with this project: Bentall Kennedy, Sun Life Assurance Company of Canada, Urban Equation (embodied carbon report), Energy Profiles Limited.

Quebec

École Curé-Paquin, Saint-Eustache, Saint-Eustache

Owner: La commission scolaire de la Seigneurie-des-Milles-Île

The school district is building a new 3,088 sq. mm. elementary school to accommodate more than 300 students

Cima+ Sherbrooke

cationspace

Owner: Cima+ This is the first Quebec office space project to achieve ZCB certifi-

Rayside Labossière architectes, Montréal

Owner: Labossière architectes This project combines office and



residential space and was one of the first projects to receive the original LEED certification in 2005. Even though the structure is about 15 years old, it didn't take much effort to meet the ZCB certification requirements in 2019.

Nova Scotia The Wilkinson Project, Dartmouth

The Wilkinson Project is a 65,000 sq. ft. multi-tenant warehouse at 355 Wilkinson and 495 Wilkinson



New SR&ED credit writing initiative launched to boost innovation in the Canadian construction industry

Canadian Design and Construction Report staff writer

The Canadian Construction Association (CCA) says it and Canadian Construction Innovations (CCI) have set up an exclusive partnership with Invennt Business Inc. to offer scientific research and experimental development (SR&ED) credit writing services to the industry.

SR&ED credit is a federal tax incentive program designed to encourage Canadian businesses of all sizes and sectors to invest in innovation.

The program and its allocated funds are governed and distributed by the Canada Revenue Agency (CRA).

"For this reason, it's important for businesses to have expert assistance in preparing and filing their claims in compliance with both Canada's tax laws and the CRA's established filing process," the CCA says in a statement.

"An industry first, this new benefit will offer CCA members the opportunity to file claims for SR&ED tax incentives without the hassle and upfront cost of hiring additional experts, saving valuable time and resources," the statement says.



"Our goal is to promote and drive innovation in the industry, and this new valued service will make it easier for our members to have a better chance at getting a SR&ED credit," said CCA preesident Mary Van Buren.

"We are thrilled to launch this partnership with Invennt to help and encourage our members to further their innovation goals," said CCA chair John Bockstael. "The SR&ED credits will help the industry to remain competitive, grow and to reinvest to promote innovation." CCA and Invennt have identified an opportunity to grow SR&ED claims from the current 0.7 per cent to close to 7 per cent, which would bring it in line with the industry's share of the Canadian economy. The service will be offered to members through their respective local construction associations.

CONTACTUS FRANÇAIS

For more information about CCA SR&ED writing service or to download a guide visit: cca-acc.com/sred.



Ontario Construction Act adjudication fees:

Can adjudicators earn a living doing their work?

By Mark Buckshon Ontario Construction News staff writer

How much will adjudicators earn when they start resolving cases under new Ontario Construction Act regulations which went into effect in October?

There are clues in documentation provided by Ontario Dispute Adjudication for Construction Contracts (ODACC), which is the monopolystructured Authorized Nominating Authority (ANA) for adjudicators under the province's prompt payment legislation.

There are also many uncertainties – notably because the system is new and untested through real-world experience.

The clues suggest that many adjudicators will at best earn a small parttime income, while a few will earn significant fees, those working on disputes about large contracts greater than \$100,000 to \$1 million or more.

While the new rules took effect on Oct. 1, they only apply to projects and contracts that either had commenced or were in the procurement stages after that date. So, unless the project is very small and/or there is an earlystage payment dispute, the first adjudications won't reach the system for several months.

(When the United Kingdom introduced an adjudication system years ago, the first cases only started appearing about a year after the law went into effect.)

However, one difference between the UK and ODACC model is that the adjudication process has been designed to be practical for even the smallest contractors and disputes. (Consultants and lawyers familiar with the British model suggest that adjudication isn't practical for disputes there less than \$75,000 to \$100,000 because of the associated legal costs and fees.)

ODACC project manager Carina Reider says that ODACC believes in most cases, adjudicators will be selected by mutual agreement and that the disputing parties and the adjudicator will negotiate their fees.

However, there is a fail-safe system in place: If the disputing parties cannot agree on an adjudicator, ODACC will appoint one from its roster, and then, if they cannot agree on the adjudicator's fees, ODACC has set out standard processes and fee schedules for disputes, based on the disputed dollar value.

In these cases, if the amount disputed is less than \$9,999, then there is a flat \$800 adjudication fee, generally split evenly between the two parties. Disputes between \$10,000 and \$24,999 have a \$1,000 fee. From \$25,000 to \$34,999 the fee would be \$2,000 and from \$35,000 to \$49,000 the fee would be \$3,000.

Projects greater than \$50,000 have a fee schedule based on hourly rates, rising as the amount to be resolved increases, from \$250 per hour for disputes under \$299,000 to \$750 or more for disputes greater than \$1 million.

As of Dec. 12, there were 23 adjudicators on the ODACC registry. To qualify, the adjudicators must have 10 years construction industry experience, complete an online course and in-class sessions, and pass an evaluation exam to verify their qualifications. Prospective adjudicators need to pay ODACC a \$995 training fee plus an additional \$250 plus HST to complete the registration process.

"We can now confirm that there

have been a lot of high quality applications from people with a wide array of backgrounds to become adjudicators," Reider says. "ODACC receives new applications every day. ODACC anticipates that it will have well over 100 qualified adjudicators (all with significant experience and all skilled) on the approved registry."

Reider says adjudicators can set their own hourly fees, which so far range from \$250 to \$750 an hour, based on their published fees on the ODACC website.

ODACC collects a fee for each adjudication, equal to 50 per cent of the adjudication cost for adjudications costing under \$3,000 and 40 per cent of the adjudication cost for more expensive adjudications.

ODACC believes in most cases, the disputing parties will select their adjudicator by mutual agreement, and the adjudicators will negotiate their fees, regardless of the fact they reached the adjudications stage because they were in conflict. Reider says ODACC's "understanding of the experience in other jurisdictions" is the disputing parties "can usually agree on the adjudicator."

Larger disputes certainly can command high fees and revenue for both the adjudicators and ODACC. Overall, disputing parties will face significant costs, even when both parties are sharing their adjudication fees, because in these large cases it is likely each party will hire its own legal and expert counsel.

But what about the small cases?

Say, for a \$24,000 two-party dispute, representatives of each side would be expected to pay their own share of adjudication costs (and if they don't agree to pay the adjudicator a higher amount), they would each pay \$500 – and the adjudicator would earn \$500.

If the adjudicator's hourly rate is \$250, this suggests that the complete review and decision would need to be made in two hours or less. Is that practical?

One answer may rest with the closest equivalent for adjudication of smaller cases, the Small Claims Court system. In Small Claims Court, a judge will review dozens of cases in a day, rendering quick decisions. Presumably adjudicators could move quickly with their review and decision-making on simple matters.

"ODACC believes that it is definitely practical for an adjudicator to do an adjudication in two hours (or, in some cases, less than two hours) because the adjudicator can set the process so as not to require him or her to spend too much time," Reider said.

But how much volume will there be? ODACC says it doesn't plan to cap the number of qualified adjudicators. If there are only a few adjudications, and there are several adjudicators, adjudicators' earnings will be at best a modest part-time top-up, except for the rarer larger filings.

Contractors seeking payment who qualify for adjudication under the Construction Act have good reason to file – while the decision isn't final, it is binding unless it is litigated further and overturned by a court.

The "winner" in the adjudication process has the right to collect and keep the money pending a final court decision, reversing the dynamics of conventional construction payment dispute claims – where a contractor seeking payment has to spend thousands of dollars on litigation while the respondent holds onto the money until the court reaches a decision.

Assuming there are 100 adjudicators working on files at the ODACC fail-safe rates for amounts less than \$50,000 with an average adjudication fee of \$1,500 (of which \$750 is retained by ODACC), there would need to be more than 6,500 adjudications a year for each adjudicator to earn \$50,000. Of course, this number ignores the much larger adjudications, which ODACC believes will represent the largest part of its business volume. The fortunate adjudicators earning \$750 or more an hour on large, complex disputes will clearly earn professional-level incomes.

Presumably there is an opportunity for adjudicators to conduct some self-promotional marketing because the parties choose any adjudicator they mutually approve, and in these cases, the adjudicator can set out both the fees and processes. And adjudicators may be able to convince the disputing parties to pay fees higher than set out in the ODACC schedule, even if ODACC selects the adjudicator for the dispute.

"Fees are negotiated between the parties and the adjudicator for each case and there is no set fee for projects below \$50,000 or above \$50,000," writes ODACC's Carrina Reider. "The percentages paid to ODACC to cover its costs and the percentage paid to the adjudicator for his or her work are based on the amounts negotiated and paid by the parties, not on the amount in dispute. If the parties and the adjudicator cannot agree on the fee, it will be set by ODACC and will be proportionate to the amount in dispute." "An adjudicator determines the process that he or she deems appropriate, based on the fee and the case, so the adjudicator will receive fair compensation for the fee received by the adjudicator," she writes.

"In terms of the percentage of the fees that go to the adjudicator and the percentage that goes to cover ODACC expenses, the percentage was approved by the Attorney General on the recommendation of its independent Fairness Monitor Ernst & Young, based on detailed cost and revenue projections for the five-year term of the ODACC contract."

"ODACC costs include a new, state-of-the-art custom built computer platform that ODACC was required (by the Ministry of the Attorney General) to create (and will cost close to \$1 million), salaries, rent, overhead, etc.," Reider says.

"ODACC is incurring the bulk of its costs up-front, with no guarantee of any volume of work and no guarantee that it will recover its costs over the course of the work it does for the Ministry of the Attorney General. In fact, ODACC anticipates that its costs will likely exceed its revenue for a number of years."

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From armoured vehicles to granular cement: Canadian conglomerate asserts game-changing innovation to reduce greenhouse gases

Canadian Design and Construction Report staff writer

A company better known for armoured vehicles and security systems says its scientists have invented what it describes as "the first-of-itskind granular cement – a major advancement in addressing the deficiencies of one of the world's most widely used building materials."

Toronto-based INKAS says its granular cement overcomes problems with conventional powdered cement and other attempts to create the building material in granular form.

Cement granulation is not a new concept, and has been regarded as an ambitious objective in materials science," the company says in a statement. "Although various processes have been

patented after physically achieving granulation, they have not been applied in practice since their initial invention. Despite the numerous attempts over the past decades to successfully granulation cement, the outcomes have not produced cost-effective or practical solutions that can be used in the field."

The need for granulated cement is widely recognized in the industry since, in its powdered state, cement has a short shelf life due to premature hydration from moisture in the air.

"Additionally, the powdered cement exposes workers to the adverse effects of dusting, and with more than three billion tons used each year, it is one of the two largest producers of carbon dioxide (CO2) – creating up to 5-10 per cent of man-made emissions of this a major greenhouse gas worldwide," the statement says.

"The determination of INKAS scientists has successfully led to the creation of a patent-pending granulated cement whose characteristics and shelf life exceed that of conventional powdered cement."

The company says its scientists discovered that the key to creating granulated cement lies within the physicochemical activation of cement powder which is caused by placing cement under mechanical stress. Furthermore, this process makes it possible to granulate/pelletize the activated cement with practically any com-



monly used equipment.

"The mechanical energy applied to the cement grains causes changes within the particle, and results in the rearrangement of atoms and molecules in a crystal structure. These changes lead to altering the internal energy of the cement particles, thereby causing their activation.

"Physicochemical activation increases the attraction of cement particles to each other, as the cement is energetically charged in this state. The energy charge of the activated cement is the binder that holds the cement grains together in the granulation process."

INKAS says its scientists have been invited to present their findings at the Seventh International Conference on Durability of Concrete Struc-

> tures (ICDCS 2020), Jinan City, China, next June, "where they will be speaking amongst esteemed subject matter experts."

> The INKAS website says is it is alobal conclomerate with presence in a multitude of industries and geographies headguartered in Toronto, Canada. "For over two decades, INKAS® has been offering integrated security solutions for retailers, government agencies, financial institutions, global corporations and high-profile individuals all over the world, the company says. "INKAS started its operations in October 1995 in Toronto, Canada. To date, INKAS has grown to employ over 350 highly skilled and specialized team members who produce the highest value products and services in the industry."

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New federal infrastructure minister wants to speed up pace of building projects



Ontario Construction Report staff writer

Catherine McKenna says her top priority as Canada's new minister of infrastructure and communities is to speed up the pace of building projects.

"It is up to all orders of government to pull together and provide the essential infrastructure that will maintain and improve the way people live, work, and raise their families," McKenna said in a speech to the Federation of Canadian Municipalities.

"The time to invest in Canada's infrastructure is now to bring Canadians good jobs, a cleaner environment and thriving communities."

The Liberal government has committed more than \$180 billion over 12 years to improving roads, bridges, public transit and other needed infrastructure across Canada.

McKenna told municipal leaders that accelerating the pace of projects is the first of three main priorities.

"Let me just be clear about my priorities," she said. "My first priority is getting things built quickly that matter to the lives of Canadians."

McKenna said getting projects off the ground quickly will require all levels of government to work together.

"This is every bit as much about rural broadband, safe drinking water in remote communities and leveling the playing field on other baseline community infrastructure as it is about big cities, mega transportation projects which do tend to capture all the media attention," she said.

Among the Liberal government's top priorities, McKenna told municipal

leaders she wants to ensure the benefits of infrastructure investments are distributed fairly across the country, including in rural and remote areas, including federal funding for highspeed internet service.

Tackling climate change is also a priority for McKenna who stressed that "infrastructure must respond to, and be more resilient to climate change, but also be a part of the solution" in the face of new challenges for municipalities, including flooding, drought, wild fires and extreme heat."

"We are partners together in this. Making sure government works for people all governments, at every level —is the best argument for maintaining strong, healthy democracies."

> Catherine McKenna Minister of Infrastructure and Communitier Liberal Party of Canada



FCM



Tackling climate change while saving money for clients



By Donna Mayer Special to Canadian Design & Construction Report

Leaders in the Canadian design and construction industry are tackling climate change and courting new customers by embracing passive design strategies that maximize the use of free, ambient sources of energy to light, heat, cool, and ventilate building spaces.

Passive House design leaders reduce the need for "active" energyconsuming mechanical systems that cost money to heat, cool, and circulate air, producing 90 per cent reduced heating demand on day one.

Ten of these early adopters caught our eye and we have named them the Top 10 Passive House Industry Leaders. Our Top 10 List is made up of architects, developers and owners from regions across the country.

The listing is alphabetical. Coolearth Architecture Inc. Richmond Hill, Ontario

Coolearth Architecture Inc. was founded in 2008 to design and imple-

ment projects that achieve high levels of energy efficiency, comfort, and durability.

Breezeway House is a 3,300-sq. ft. multi-generational house designed to be durable, energy efficient, comfortable, bright and regenerative. It is targeting Passive House Certification. Coolearth predicts the house will need only 13 photovoltaic panels to achieve their Net Zero goal.

https://www.passivehousecanada.com/projects/breezewayhouse/

Dubbeldam Architecture + Design Toronto, Ontario

Dubbeldam Architecture + Design is a multi-disciplinary design studio specializing in creating innovative and environmentally-responsible design solutions.

Their Skygarden House, in Toronto's urban core, is a renovation that brought an old, leaky home close to Passive House levels of performance, and recognition from the Green Building Council. High-performance insulation, an airtight building envelope, triple glazing, and mechanical ventilation with energy recovery aid in minimizing space-conditioning requirements.

https://www.ecohome.net/guides/ 1134/the-skygarden-house-renovation-in-toronto-canadian-green-building-award-winner/

Indwell

Hamilton, Ontario

Indwell is a Christian charity that creates affordable housing communities in south-western Ontario which has committed to the Passive House standard.

Their project, Blossom Park, is the redevelopment of a group home into 34 supportive apartments and a community hub in Woodstock, Ontario.

https://www.passivehousecanada.com/projects/blossom-parkpassive-house/

Landa Global Properties and Asia Standard Americas Vancouver, B.C.

Vancouver land developers Landa Global Properties and Asia Standard Americas are proposing to build the tallest Passive House development in the world.

Known as 1400 Alberni, the proposal is for two residential towers (43 and 48 storeys), amounting to about 650,000 sq. ft. (60,387 sq. m.)

A mix of 491 condominium and market rental units will be created, along with an onsite childcare facility, a new park, and improvements to the public realm.

https://www.passivehousecanada.com/projects/1488-alberni/

Lanefab Design/Build Vancouver, B.C.

Lanefab is an integrated design/build company that crafts custom homes and infill mini-homes (laneway houses) with design quality and energy efficiency as core values.

Trafalgar St. Passive House is the single-family Lane House built by Lanefab in Vancouver in 2018. The house is zoned RS-5, but the east-west urban lot had very poor solar access making it a challenging site.

See comprehensive profile page 16.

https://www.passivehousecanada.com/projects/trafalgar-st-passive-house/

Landform Architecture Ltd. Penticton, B.C.

Landform Architecture offers architectural design, industrial design, landscape design, and planning services throughout British Columbia. Advocating that architecture must respond directly and simply to its geographic, climatic, and urban context, the firm has been nationally recognized for their regionalist approach to sustainable design. The new childcare centre at Okanagan College in Penticton is an excellent example. Designed by Landform Architecture, it is the first commercial building in Canada to receive Passive House certification.

https://globalnews.ca/news/43347 88/childcare-centre-in-penticton-winner-of-national-green-building-award/

Nick Bray Architecture Ltd. Vancouver, B.C.

Nick Bray Architecture designs and builds custom homes specializing in modern, sustainable, passive homes.

The Passive Narrow is a modest size Certified Passive House built on an accessible budget, currently under construction on a 25 ft. wide lot in Vancouver.

https://www.passivehousecanada.com/projects/the-passive-narrow/

Perkins and Will Toronto, Ontario

Perkins and Will is a global architectural firm with a demonstrated commitment to reducing greenhouse gas emissions in a meaningful, measurable way. This year they are celebrating 12 years of carbon-neutral business operations.

With the stated purpose that "We're in it for the greater good," Perkins and Will is walking the talk, sponsoring Passive House Canada's High-Performance Buildings Student Design Competition.

https://conference.passivehousecanada.com/student-design-competition/

Souls Harbour Rescue Mission Regina, Saskatchewan

The Souls Harbour Rescue Mission is a registered Christian charity established in 1990 that aims to rescue people from poverty and addiction through emergency food, clothing and shelter, and recovery programs.

The Samaritan Passive House Project is the Mission's project to replace their aging soup kitchen and men's emergency shelter and add 20 affordable housing units and a 60 spot subsidized daycare.

The Mission reclaimed a contaminated lot, built an environmentally friendly "green" building, and doubled the capacity of their men's shelter from 12 to 24 spaces.

https://www.passivehousecanada.com/projects/souls-harbourrescue-mission-samaritan-passive-ho use-project/

Stantec Architecture Prince George, B.C.

Stantec Architecture is a top tier global design and delivery firm. Founded in 1954 as a one-person practice by Dr. Don Stanley in Edmonton, Alberta, Stantec now has 22,000 employees working in over 400 locations across six continents.

Stantec is the architect on record for the University of Northern British Columbia's new Wood Innovation Research Lab (WIRL) located in Prince George. The lab is a certified Passive House, the first building of its type in North America to exceed the exacting international standard.

https://www.myprincegeorgenow.com/96326/unbcs-wood-innovation-research-lab-wins-wood-wo rks-bc-award/



Forward thinking pays off for Lanefab Design/Build

Canadian Design & Construction Report special feature

When the global financial crisis hit in 2008, business took a dive and residential designer Bryn Davidson began to rethink his approach.

Both an innovator and an early adopter, Davidson teamed up with contractor Mat Turner to launch a values-based design-build business in April 2009. With design quality and energy efficiency as core values, the team began carving out niches in the pre-fab, laneway and Passive House markets.

"We wanted to come up with a building system that could apply to every project," says Davidson. "We wanted to go beyond the code on every single project."

Ten years later Lanefab Design/Build has constructed 120 energy efficient projects, all built beyond code.

Located in Vancouver, a city with scarce land availability and high land costs, Lanefab initiated and led the movement to give laneway housing a try in the city.

Laneway houses are small secondary residences typically located at the rear of an existing home, and often replace an existing garage or parking area. They allow more people to live within the city's limits, reducing the need for cars and lessening the pressure to expand suburban development.

Davidson championed the policy changes with city regulators to permit the creation of laneway homes, effectively creating his own niche. The company completed the city's first laneway house in May 2010.

The accomplishment earned Lanefab the 2011 Green Living – Canada Excellence in Corporate Responsibility Award, small business category.

Davidson immigrated to Canada in

2001 from the U.S. via Alaska, where he was working as a mechanical engineer, having graduated with a mechanical engineering degree from the University of California, Berkeley in 1998.

He went on to study architecture and sustainable development at the University of British Columbia, graduating at top of his class in 2004 and earning a Masters of Architecture degree and the RAIC Student Medal.

"Because of our name a lot of people think we only do laneway houses," says Davidson.

The company builds about 10 houses per year, half of them are laneway houses and half are full-size. The firm employs 20 people, including designers and carpenters.

"Passive House is the finish line," Davidson says of his original business plan.

Passive design strategies maximize the use of free, ambient sources of energy to light, heat, cool, and ventilate building spaces, reducing the need for "active" mechanical systems that use energy and cost money to heat, cool, and circulate air. The primary return on investment in a Passive House is the reduction of operating costs and greenhouse gas emissions.

"Passive houses need 90 per cent less energy for heating than a regular home," says Davidson. "You can be cash flow neutral from day one. The costs add a little bit to the mortgage, but there is less to pay on utilities."

In addition to consuming less energy, Passive Houses are more comfortable and quieter than conventional homes.

The Passive House (Passivhaus) standard originated in Germany; where the first Passive Houses were built in the 1990's. According to the International Passive House Association, there are around 30,000 Passive House buildings in Europe, of which some 1,600 are certified.

Lanefab has been building Passive Houses for the past four years, and only recently began seeking certification.

Municipal cash incentives make a big difference, says Davidson. It costs about \$10,000 for very detailed energy modeling, documenting the construction process and working



Salus Clementine Passivehouse



with a consultant to achieve a Certified Passive House, he says.

"We probably wouldn't certify without those incentives."

Passive House (Passivhaus) is considered to be the most rigorous voluntary energy-based standard in the design and construction industry today.

"You have to be very meticulous during design and construction," says Davidson.

Passive Houses have an extremely high level of air tightness. There is no thermal bridging. Ventilation is provided by a super-efficient heat recovery ventilation unit (HRV) which runs continuously.

"With a passive house there is no leakage," says Davidson.

The cost premium is approximately 5-10%, with most of the upgrade cost going to the window and door package. Walls in Passive Houses are 17 inches thick.

"We are using lots of insulation," says Davidson. "Walls are rated R52 and the roof is R90."

Relaxation of design guidelines is critical to success, he says.

A key example is the City of Vancouver's "thick wall exclusion", wherein thickness doesn't count towards gross floor area.

"That's one of the key barriers that cities need to get rid of right away," Davidson asserts.

More than 10 years ago, the City of Vancouver set the goal to become the greenest city in the world. Currently ranked as the city with the lowest greenhouse gas emissions per person in North America, Vancouver is well on its way to achieving its goal.

The city offers developers a range of design incentives to encourage the construction of Certified Passive Houses including a 2% floor area incentive and extra height.

"Extra building depth and height, extra relaxation on setbacks really help," Davidson acknowledges.

And it shows. Business is booming for Lanefab with a total of 15 homes under construction including six Passive Houses. "It's been crazy busy," says Davidson.

"We expect there to be more and more demand," he says.



That being said, Lanefab is ready to take on more clients. "If anyone wants a Passive House anywhere in the country we can do that as a design," says Davidson. They would have to work with a local contractor.

According to Davidson, Lanefab collaborates quite extensively with their competition. "There is value in collaborating rather than competing," he says.

Looking to the future, Davidson is keeping his finger on the pulse of City regulators and eagerly anticipating the arrival of the zero emissions building.

The City of Vancouver plans to transition to zero emissions buildings in all new construction by 2030 by setting limits on emissions and energy use in new buildings.

Incentives are already on the table, with \$10K-\$20K to offset cost of certification to help out early adopters. Lanefab and Davidson are ready.



Mitchell House: Original by Arthur Erickson, Reno / Addition by Lanefab

NEWS BRIEFS CONSTRUCTION ACROSS CANADA

Here is a roundup of some significant stories relating to architectural, engineering and construction across Canada.

BRITISH COLUMBIA Builders Code honours six companies

The Builders Code has honoured six companies for their leadership at the inaugural Builders Code Champion Awards in Victoria.

To achieve recognition from this pilot program, individuals and organizations must have demonstrated their commitment, leadership, and action toward advancing and retaining women in their company and achieving the provincial goal of 10 per cent tradeswomen by 2028.

Nomination applications were accepted from May to November 1, with winners selected by a judging panel comprising of Minerva BC, the British Columbia Construction Association (BCCA), and the Builders Code Governance Committee.

The winners are:

- RAM Consulting (Vancouver) in the 'Recruiting & Hiring Champion' category;
- Scott Construction Group (Vancouver) and Kinetic Construction (Victoria) in the 'Workplace Culture Champion' category;
- Westcana Electric (Prince George) in the 'Community Champion' category;
- Durwest Construction Management (Victoria) in the 'Initiate of the Year' category; and
- Westcana Electric (Prince George) and Chinook Scaffold Systems (Nanaimo) in the 'Contractor of the Year' category.



"Your commitment to safe and inclusive workplaces contributes to a more accessible sector for everyone," said Mitzi Dean, Parliamentary Secretary for Gender Equity. "Initiatives like the Builders Code are a rallying point to get more people involved in the trades, helping our province continue to grow while embracing diversity."

ALBERTA

New ratings system will qualify contractors for government infrastructure projects

A new rating system for government contractors and consultants will allow Alberta Infrastructure to reward high-performing vendors and suspend problematic ones from bidding on government construction projects, the Edmonton Journal has reported.

The new "carrot and stick" model was requested by the construction and design industry, representatives said Monday, and should improve the likelihood of schools, hospitals and other public buildings being constructed on time and on budget.

"The whole purpose of this is to reward good contractors and good consultants and — I wouldn't say penalize — but there should be consequences for poor performance," the newspaper quoted Paul Verhesen, past chairman of the Alberta Construction Association and president and CEO of Clark Builders, as saying.

Starting Jan. 6, 2020, any contractor or consultant bidding on an Alberta Infrastructure project worth more than \$100,000 will be required to take part in a "Vendor Performance Management" (VPM) program.

Infrastructure Minister Prasad Panda said the program was developed in consultation with the construction industry, engineers and architects. It will assess vendors based on the quality of projects, how well they're managed, if they stick to the proposed schedule, the cost and their safety record. The government will give companies feedback at regular intervals throughout the project, which should allow them to stave off potential problems earlier, he said.

SASKATCHEWAN P3Architect wins 2019 Premier's Awards of Excellence

P3Architecture Partnership has won the 2019 Premier's Awards of Excellence in Design–Architecture by the Design Council of Saskatchewan (DCS) for its Christ the Redeemer Church project in Swift Current and the College Avenue campus of the University of Regina.

To qualify, entries for design work in the province needed to be designed by a Saskatchewan resident and completed within the past two years.

KSA Group Architecture received the Award of Merit for the 301-1st Ave. North project. Honorable mentions went to Henry Downing Architects for the Jim Pattison Children's Hospital and to Kindrachuk Agreuy Architect for the Skyxe curbside expansion project

MANITOBA

A five year RCMP investigation into the construction of Winnipeg's police headquarters has ended without charges being laid, but Winnipeg Mayor Brian Bowman has renewed his call for a public inquiry.

The provincial prosecutions service announced its decision after the investigation into fraud and forgery allegations related to the project,



which involved the purchase of the former Canada Post complex in downtown Winnipeg and the conversion of its warehouse component into the police headquarters. Work was completed 2016 at a cost of \$214 million.

The Winnipeg Police Services building has been saddled with construction deficiencies that remain the subject of a lawsuit between the city and its contractors, CBC reported.

ONTARIO

Ontario Association of Architects highlights Queens' Park Picks at legislative reception

The Ontario Association of Architects (OAA) has celebrated this year's World Architecture Day with its fourth annual visit to Queen's Park, hosting a reception with Members of Provincial Parliament.

At the Dec. 10 event, the OAA underscored the importance of architects and architecture while also discussing the profession's contribution to Ontario's economy and the roles that architects play in addressing big issues such as housing affordability and climate change. The event also marked the unveiling of this year's Queen's Park (QP) Picks eight special buildings or structures chosen from a larger list of MPP nominations.

More than 20 MPPs visited the exhibit and spoke with OAA representatives and architects associated with the QP Picks.

Nominated by MPP Joel Harden (Ottawa Centre), Ottawa's Corktown Footbridge (DTAH Architects Limited) was one of this year's selections. Bringing together structure, architecture and landscape in a way that created a sense of place, this new local landmark serves as a critical connection between communities east and west of the Rideau Canal.

The seven other projects chosen were:

• Aaniin Community Centre and Library in Markham, architect:

Perkins & Will Canada Inc.;

- Bergeron Centre for Engineering Excellence in Toronto, architect: ZAS Architects Inc.;
- Juravinski Hospital and Cancer Centre in Hamilton, redevelopment architect: Zeidler Partnership Architects in partnership with Invizij Architects Inc.;
- The Metalworks in Guelph, redevelopment architects: SRM Architects Inc. (heritage building reuse) and Kirkor Architects and Planners;
- Ontario Place in Toronto, architect: Craig, Zeidler & Strong, Cinesphere rehabilitation:
- Gow Hastings Architects Inc.;
- Waterdown Public Library in Hamilton, architect: Rounthwaite Dick & Hadley Architects Inc.; and
- Westinghouse HQ in Hamilton, rehabilitation architect: McCallum Sather Architects Inc. Quebec

QUEBEC

CISC Quebec Region hands out awards of excellence in steel construction

On Nov. 11, the Canadian Institute of Steel Construction's (CISC's) Quebec Region handed out its 21st annual Steel Awards for Excellence in Steel Construction at Montreal's Windsor Hotel.

Organized by Quebec Region manager Hellen Christodoulou, the event highlighted projects that demonstrate the beauty, resilience, durability and other benefits of steel as a construction material. The awards program received 111 nominations this year, which were narrowed down to 40 finalists before the jury announced 13 winners.

Twelve of those awards honoured projects and teams that included consulting engineers, as follow:

- Buildings outside Quebec: Soprema factory, Woodstock, ON -Elema Experts-Conseils.
- Bridges outside Quebec: Governor Mario M. Cuomo Bridge, New York, NY. - Tappan Zee Constructors (TZC) Engineering.

- Erection/Ingenuity/Constructability (1st winner): Pont Haubané, Montreal - SNC Lavalin.
- Erection/Ingenuity/Constructability (2nd winner): Annexe Ferrier generator building, McGill University, Montreal -CIMA+.
- Building renovations: Grand Théâtre de Québec, Quebec City -WSP.
- Commercial buildings: New Maison de Radio-Canada, Montreal -NCK.
- Institutional buildings: Infrastructure rehabilitation for Formula 1 Grand Prix of Canada, Montreal -CIMA+.



- **Residential buildings:** Urbano condos, Sherbrooke St-Georges Structures et Civil.
- Stairs/Walkways: Quad Windsor Skybridge, Montreal - RJC Engineers.
- **Bridges:** New Samuel De Champlain Bridge corridor, Montreal Arup and SNC Lavalin.
- Young Engineers/Architects: Félix Bédard, vice-president and cofounder, Elema Experts-Conseils, for l'Hôtel Humaniti, Montreal.
- Jury's favourite building project: 2018 expansion of Québec City Jean Lesage International Airport (YQB) - Stantec
- Jury's favourite bridge project: New Samuel De Champlain Bridge corridor, Montreal - Arup and SNC Lavalin.

NEWS BRIEFS



NEW BRUNSWICK \$5 million Moncton hospice breaks ground

Hospice Southeast New Brunswick held a ceremonial sodturning at the site of its \$5 million residential hospice in December, despite some frigid temperatures.

"I'm already overwhelmed today and it's just the shovel," said Dr. Janice Cormier, a general practitioner who works in oncology at the Dr. Georges-L. Dumont University Hospital Centre.

The bilingual 10-bed hospice, the first for southeastern New Brunswick, is scheduled to open in late 2020 and will include a pediatric palliative care bed.

Dennis Cochrane, chair of the board of directors of Hospice Southeast New Brunswick, said that despite the ceremonial shovels in the ground on Thursday, construction won't start until April.

NOVA SCOTIA

Construction supervisor charged after worker falls off Dartmouth Crossing site roof

Police have charged a Halifax man in connection to the tragic workplace fall that took Brandon Alcorn's life on a construction site last year, Global News has reported.

Jeff Gooch, 37, was arrested last month and faces one count of crimi-

nal negligence causing death. He was the supervisor at the Dartmouth Crossing shopping area construction site where Alcorn fell off a roof on March 13, 2018.

Alcorn suffered irreparable brain damage and died of his injuries in the hospital. He was just 22 years old.

In an emailed statement, the provincial Department of Labour confirmed it has yet to complete its own investigation into Alcorn's death, and whether any violation of the Nova Scotia Occupational Health and Safety Act took place.

PRINCE EDWARD ISLAND

A new committee aimed at getting more women working in construction on P.E.I. met for the first time in December.

The 10-member committee, mostly made up of women who work in the industry, was formed by the Construction Association of P.E.I.

"There is all kinds of roles that are played in building anything in construction," said Jessie Champion, a second-year construction technology student at Holland College." And I think that women could challenge those ideas more often and not just think about the pigeonhole of manual labour that comes into construction."

NEWFOUNDLAND AND LABRADOR

A Corner Brook company has been

charged with violating health and safety regulations after an employee died on the job in Labrador, CBC reports.

CONSTRUCTION ACROSS CANADA

Johnson's Construction Ltd. has been charged with the six counts under the Occupational Health and Safety Act.

Service NL provided information to the broadcaster that the fatal incident happened at a construction camp near Lodge Bay on the Trans-Labrador Highway on June 22, 2018, while a crew was preparing to move a construction camp trailer from one site to another.

There will be a hearing in Wabush provincial court on Jan. 14. **NUNAVUIT**

The Nunatisaq News reports a building boom is under-way in lqaluit. The local publication reports six new major developments began construction this past sealift season. That includes 92 residential units and 179 hotel rooms, according to the city's planning and development office.

The city saw almost three times more residential units permitted in 2019 than last year.

Most of the 92 units approved this year may go towards government staff housing, rather than public housing units needed to address the city's long-standing housing crisis, Mark Brodrick, Iqaluit's new director of planning and development, was quoted as saying.

The Canadian Mortgage and Housing Corp. says last year Iqaluit needed nearly 200 more units to meet its housing demands. Iqaluit also needs as many as 105 new units per year to keep up with its growing population, according to the city's general plan.

Meanwhile, commercial development saw well-established corporate landowners, mostly based outside Nunavut, gain even more properties. "It's no secret that there's a lot of competition for housing and that the city needs more residential units," Brodrick told Nunatsiaq News.

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