FAMILY ENTERPRISE CANADA

CASE STUDY

Sustainability Indicators for Family Business

KEMP CONSTRUCTION MANAGEMENT LTD.

Net zero building for a sustainable future

CORE BUSINESS:
High performance and sustainable home construction

INDUSTRY SECTOR:
Home building, construction and renovation

FAMILY ENTERPRISE HISTORY:
2nd generation

HEADQUARTERS:
Delta, British Columbia

EMPLOYEES: 11

Supported by

FAMILY ENTERPRISE FOUNDATION

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Below: David Kemp and son, Vanessa Kemp, Debbie and Steve Kemp, and Jeff Kemp with David's other son.

INTRODUCTION

For almost two decades, Kemp Construction has built exceptional homes for its clients in British Columbia. It has done so through an eight-point promise that encompasses not only guarantees of industry-exceeding standards but prize-winning quality every time it delivers to clients.

The core team, a second-generation family, comprises Steve Kemp, president, Debbie Kemp, whose responsibilities range from finance to strategy, and next-gen David Kemp, who leads operations. Together, they are working to reduce our operational carbon emissions and demand for energy, one high-performance home at a time.

"I saw this as an area where we could do better than the status quo."

HOW KEMP CONSTRUCTION WAS BORN

Steve Kemp always dreamed of having his own business. After years of working in construction, sales and marketing, he took the plunge in 2006, founding Kemp Construction Management Ltd., and what would quickly become one of British Columbia's most trusted experts for high performance building, for custom homes and renovations.

Kemp Construction is at the forefront of energy-efficient, net-zero building techniques and technologies. As "green" builders, and as a business family who want to leave the world in better shape for the next generation, they "care deeply" about creating sustainable, high-performance homes, and creating better homes for their community.

That's the vision now. Years earlier, Steve Kemp the patriarch and visionary spotted room for vast improvement in the construction sector. "I saw buildings as an area that was, generally, inefficient. They weren't being built to a very high standard," explains Steve. "I've always been competitive, and that's part of my nature. I saw this as an area where we could do better than the status quo."

As a high-performance builder, Kemp Construction is purposeful in exceeding a raft of environmental standards. Its building approaches to improving energy efficiency, creating renewable energy and reducing greenhouse gas operating emissions – all of which fall under the environmental stewardship category of the global Family Business for Sustainability initiative – is noteworthy for a business operating in an energy-intensive sector.

WHAT IS A NET ZERO HOME?

A net zero home produces as much energy as it consumes. It is up to 80 per cent more energy-efficient than a typical new home through renewable energy systems such as solar panels, wind turbines, and geothermal heating systems, which produce energy.

Net zero homes draw grid energy when their self-generated energy supply isn't sufficient. However, surplus energy can be either stored or sold. Because home building is considered a major contributor to greenhouse gas emissions, governments are modifying building codes to help meet energy-efficiency targets.

The "science" of building new homes has grown exponentially in the past 20 years, with the BC Building Code (BCBC) incorporating new advancements. BC is in "Step 3" of its five-step Energy Step Code plan to boost energy performance in construction specs and techniques by 20 per cent over basic code homes. Step 4, in 2026, calls for 40% more efficiency. By 2032, all new homes must be net zero ready.

WHAT IS A NET ZERO BUILDER?

Kemp is certified as a "Qualified Net Zero Builder." Status as such is rare as there are just over 500 net zero–labelled homes in Canada, according to the Canadian Home Builders' Association (CHBA). The "Qualified Net Zero Builder" logo can only be used by builders who have built a "net zero-ready" home. To qualify, a builder must do so with a team that includes a CHBA-qualified net zero energy advisor and work with the CHBA to obtain EnerGuide (Canada's federal energy performance rating and labelling program for houses, vehicles and appliances) and net zero-ready labels for the home.

The home must pass a rigorous testing process. Once the CHBA verifies the project as designed and constructed to net zero or net zero-ready standards, the builder can display the Qualified Net Zero Builder logo. The basic net zero-ready home logo can only be used by builders who have completed the first stage of a CHBA Net Zero Builder Training course. Only then can they be listed as net zero builders on CHBA's website, but they may not have actually built a net zero-ready home.

To obtain these labels, the builder must pass a third-party testing and energy audit. The labels are a homeowner's assurance that their home meets the stated energy efficiency performance levels. It takes a team of experts – the builder, an architect, a qualified energy advisor, and a mechanical systems specialist – to attain net zero labels. They must balance design aesthetics and the homeowner's wish list with the energy-efficiency goals of the project.

Once the energy advisor has created an overall system for the home that will allow it to achieve its energy efficiency goals, a mechanical systems specialist integrates all of the technology and heating and cooling systems involved. The builder is ultimately responsible for the success of the entire project; they coordinate the team.

Why? Environmental sustainability and the construction industry do not often go hand-in-hand. The industry is a massive consumer of raw materials and natural resources, generating an estimated 39 per cent of the world's carbon emissions, according to the World Green Building Council.

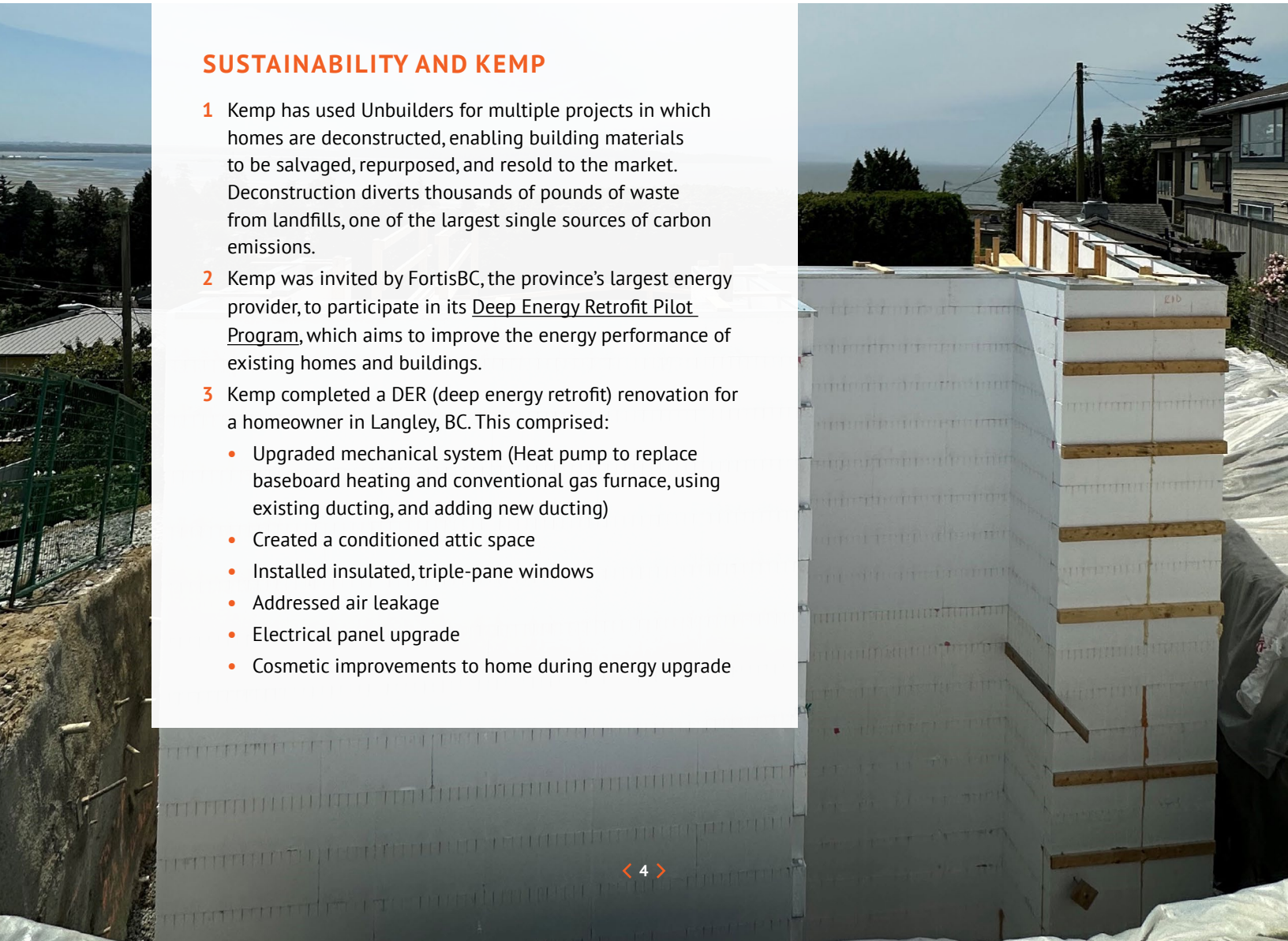
Steve recalls his intrigue in the 1980s, the early days of his building career in Ontario, when the provincial government was experimenting with high-performance construction. "This was back when (US President) Jimmy Carter was pushing solar energy, that was my first exposure to being able to build house that was more efficient and built better."

SUSTAINABILITY IS A CHOICE

Fast forward to present day and Kemp Construction has earned multiple industry accolades from the Canadian Home Builders' Association. One reason why is the family's conscious intent to do things differently. Steve points out that there's a lot of "good information out there" as to how to make a house more efficient and resilient. "But it's a question of whether the builder is going to adopt that methodology or product to make their build better. I've always said: 'Let's do it better.'"

SUSTAINABILITY AND KEMP

1. Kemp has used Unbuilders for multiple projects in which homes are deconstructed, enabling building materials to be salvaged, repurposed, and resold to the market. Deconstruction diverts thousands of pounds of waste from landfills, one of the largest single sources of carbon emissions.
2. Kemp was invited by FortisBC, the province's largest energy provider, to participate in its Deep Energy Retrofit Pilot Program, which aims to improve the energy performance of existing homes and buildings.
3. Kemp completed a DER (deep energy retrofit) renovation for a homeowner in Langley, BC. This comprised:
   - Upgraded mechanical system (Heat pump to replace baseboard heating and conventional gas furnace, using existing ducting, and adding new ducting)
   - Created a conditioned attic space
   - Installed insulated, triple-pane windows
   - Addressed air leakage
   - Electrical panel upgrade
   - Cosmetic improvements to home during energy upgrade



For Kemp that means being willing to exceed any given town's building code, to build a better home for their clients. For example, by introducing exterior insulation, high-performance windows or "hot roof" construction, in which insulation is installed closely beneath the roof decking to allow attic space to be usable like any other room in the house by bringing it into the thermal envelope of the home.

"A lot of builders are conservative. They get good at something and keep repeating it."

These concepts have long existed yet few builders were willing to apply them, or believed in their value. Case in point is one of Kemp's past projects in Richmond, where it was the first builder to use exterior insulation. Steve himself had learned how to apply exterior insulation in the early 1980s in a test project for the Ontario government. "I wasn't afraid to step into these new areas," he recalls. "But a lot of builders are very conservative. They get good at something and just keep repeating it. They get somewhat tunnel-visioned and less inclined to implement new concepts or technologies."

Not so for Kemp. Ironically, being ahead of the curve can bring up issues. The Richmond project puzzled building inspectors who were then unfamiliar with exterior insulation. As there were no precedents, neither the inspectors nor envelope engineers could reach an immediate agreement insofar as signing off on the project. That was only eight years ago. "It was a grind trying to get it through inspections," Steve recalls. "(The City of Richmond) finally brought in their head inspector. We had envelope engineers involved in providing letters and signing off on one thing after the other. You really have to be tenacious." Nowadays, Richmond is a leader in the adoption of new efficiency standards.

Indeed, there is an imperative for all builders in the province to be qualified to build to a minimum "step code" – a five-step building efficiency strategy to help meet the province's target of all new homes being net-zero energy ready by 2032.

WHAT IS NET ZERO?

There are so many terms associated with "net zero" that confusion can emerge. For example, "climate neutral," "carbon neutral" or "offsetting" are just a few. Put simply net zero refers to a state in which the greenhouse gases going into the atmosphere are balanced by removal out of the atmosphere.

Net zero is not the same as "carbon neutral" although both result in CO_2 being removed from the environment. Carbon neutral often refers to a business's ambition to limit any increase in future carbon emissions, while using offsets to neutralize existing emissions.

In general terms, a progressive builder – or any company for that matter – seeking to help improve the environment would engage in practices that help bring communities closer to net zero states.

Net zero is now

As a qualified net-zero builder, Kemp is already a decade ahead at Step 5. "I would say other builders are having to play catch up," Steve explains. "They don't have a choice." But Kemp Construction does. Invariably, the company's approach to home building comes through a scientific lens. Thanks to Steve's son David, whose deep experience in the field of sustainability, and "green" building (or LEED) compliance for multi-family dwellings, the application of science in Kemp's sustainable home-building will only intensify.

WINNING INGREDIENTS

In the past decade Kemp has earned a sterling reputation in high performance home building and renovation, picking up rewards annually since 2014. Kemp's most recent accolade – Best New Bathroom – earned it a prestigious 2023 **HAVAN Award for Housing Excellence.** The contest saw 49 builders and designers earn awards in 54 categories. Kemp also holds two 2023 Canadian Home Builders' Association **Georgie Awards**, as a finalist in "Best Residential Renovation" and "Best Kitchen Renovation" categories.

HOW KEMP HAS STEPPED UP

Kemp's leading-edge approach to building sustainably lies in its adherence to BC's Energy Step Code, a step-by-step building efficiency strategy designed to help meet the province's target of all new homes being net-zero energy ready by 2032. The code sets five performance levels or "steps" that exceed the base BC Building Code, with the higher steps being more energy efficient.

Step 1 indicates a home performs as well as, or better, than a building built to meet the minimum prescriptive energy efficiency requirements of the BC Building Code.

Step 5 indicates the home has been constructed as "net-zero energy ready," meaning it is capable of producing as much energy as it consumes, but may not be fitted with energy producing systems, e.g. solar panels. Property developers have an opportunity to set themselves apart by building to higher steps than required, which is what Kemp does today.

While the BC Energy Step Code is currently adopted by municipalities on a voluntary basis, in future, the province may require that certain steps must be met in order to meet special targets. Kemp is ahead of the curve, enabling its clients to take advantage of the multiple benefits associated with highly energy efficient new homes, including:

- **Greenhouse gas reductions** – High-efficiency homes require less energy to heat, resulting in reduced carbon emissions even if homes heat with fossil fuels. Homes heated with a heat pump will have the lowest carbon emissions.
- **Lower operating costs** – Reduced energy consumption results in lower energy costs.
- **Increased comfort** – Increased insulation and airtightness means a home is better equipped to maintain an even temperature throughout.
- **Better health** – Energy efficient homes do a better job of refreshing the indoor air by filtering out unwanted mould, moisture, pollen and other allergens.
- **Improved durability** – A high-efficiency home is less likely to have moisture and condensation issues that can lead to the deterioration of the building envelope.

There are easily more than a dozen distinguishing features of a net-zero home – from exceptional air sealing to renewable power generation, just to name a few. Kemp's clients recognize this. For them it is an opportunity to own a dream home that significantly minimizes their carbon footprint and maximizes their comfort. David explains, "You're increasing the resiliency of your property as you build better quality homes, and reduce their energy loads. My deduction is that it's purely holistic thinking, and, thankfully, the majority of our customers are professionals who are used to truly seeing a problem holistically."

Steve Kemp is as forward-looking as next-gen David. As much as he has an appreciation for preserving old, traditional Canadian homes, he won't hesitate to add any new tech to Kemp's quiver if it helps drive sustainability, or improve the home-owner experience. "We're adopting and exploring any new concepts that make us better," he says with a flourish. "We're on the leading edge of new building technologies, that are now coming out at a rapid pace. For example, on the electrical side, new control panels for electrical circuitry are available that can be programmed to distribute the electrical load more efficiently, which means the connection to the street can be smaller and better managed." Solving an issue that will be top-of-mind for our local governments, as we look to create a resilient energy system on the path toward electrification of our buildings.

In other words, every detail counts in driving down carbon footprints and driving up client comfort. What's next? Steve says the family's next frontier is to "get their heads around the carbon footprint issue more aggressively" than they are pursuing right now. "It is something that we see as being very important and more important as well for the general market."

Longer term, Kemp continues to diversify its customer base, now adding commercial renovations to complement its residential business. "It's important for us to ensure we have a resilient renovation business in a changing market. Beyond our annual goals, we all have a broader dream … about creating a small community of net zero homes. And where is that?" Steve asks rhetorically. "What does that look like? We're not there yet."

There are many questions indeed. Whatever path the Kemp family decides to pursue, they'll always be thinking about how they can make a positive impact in our communities.

"We're on the leading edge of whatever new things are coming out."

CONCLUSION – 10 CONSIDERATIONS WHEN BUILDING SUSTAINABLY

1. **Integrated** or holistic design and construction approaches form an ecosystem (architects, energy specialists, etc.) to optimize a house as a "system."
2. **Passive design** strategies (house orientation, high performance windows) cut energy consumption.
3. **Energy modelling** at design phase balances building performance with cost considerations.
4. **Build it tight**, ventilate right. Continuous fresh air and moisture control is essential.
5. **Optimize insulation** floors, walls and ceilings. Reduce thermal bridging to keep heat in.
6. **High performance** windows/doors, optimized for size/orientation, improve thermal comfort.
7. **Energy efficient** heating/air-conditioning, such as air-source heat pumps, reduce emissions.
8. **Energy efficient** hot water, located near where it is needed, cuts energy use.
9. **EnergyStar-rated** lighting and appliances reduce energy demand.
10. **Photovoltaics** (solar panels) lower energy loads.

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