

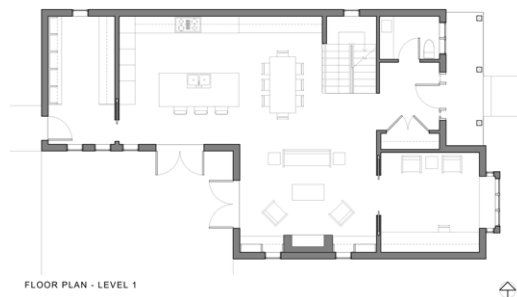


BRIDGELAND CALGARY HOUSE

February 2013

Our first out-of-province project is this 2,700 square-foot home in Calgary's Bridgeland neighbourhood. The positive relationship we forged with the homeowners and builder [Hillson Homes](#), along with digital conferencing, enabled us to work together across three provinces.

In 2008, our clients began looking for a property where they could build a new home to suit their needs. They wanted to invest in a new green home that would be comfortable, durable, filled with natural light and close to nearby transit and amenities. After a two-year search, they eventually found the perfect property right across the street from their old house!



An important factor was to maximize the amount of natural light in their home. Calgary has long, dark winters and as most of its residential streets are oriented on the east-west axis it can be difficult to get a lot of bright southern light into a home. We addressed this challenge by creating an L-shaped floor plan that enables south light to pour into the Kitchen, while still offering generous, adjacent floor space for the Dining and Living Rooms. There is also a large skylight over the main stairwell, which spills ambient light down into the center of the house. With windows in every room of the house – including the bathrooms and laundry room – there is a bright feeling of openness, with views to the outside in all direction.

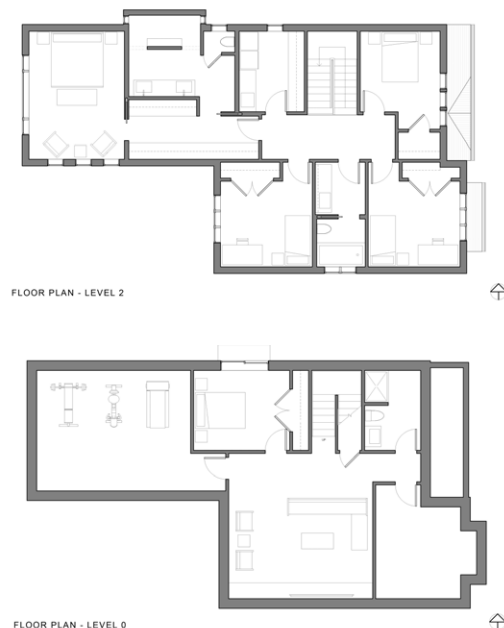
The front entrance flows from a wide front porch and includes a large closet and powder room. Off the Living Room is a flexible space that can serve as a children's playroom or a study, depending on the need. In the back, a spacious Mudroom provides access to the garage and tons of storage.

Upstairs accommodates a very spacious master suite. The suite is divided into a bedroom with views of the downtown core to the west, a large walk-in closet that doubles as private hallway to the bedroom, and a large bathroom with a tiled walk-in shower, separate toilet, double sinks and a skylight. The remainder of the second floor includes three bedrooms, a bathroom and a sizable laundry room. Long racks hang from the ceiling in the laundry room to enable air-drying clothes, which saves energy and puts moisture into the air. A huge boon in a city known for its low humidity levels.

Throughout the interior of the house, our clients opted to conserve their budget on cabinetry in order to spend more on luxury items elsewhere. We specified cost-effective IKEA systems, which enabled them to spend more on luxury countertops for the kitchen and bathrooms. An added benefit to using IKEA is that all their cabinetry has no added urea-formaldehyde, contributing to a healthy interior environment.

We are thrilled with this home's high EnerGuide rating of 83! This score is due to superior air-tightness, smart insulation design, high performance windows, and highly efficient heating and ventilation systems.

Between the 2x6 wood frame studs is blown-in cellulose insulation. We further increased the R-value of the wall assembly by installing two inches of polyisocyanurate(Polyiso) insulation on the outside face of the wall from footing to roof. With an insulation value of R7 per inch, the Polyiso reduces the effects of thermal bridging.



A final blower door test showed that the air tightness of the house is extremely high – one of our tightest building envelopes to date! With the blanket of exterior insulation and every potential leakage point sealed and caulked, the test showed only 0.89 air changes per hour. This exceeds the standard set by LEED for Homes by more than double.

Another highlight of this project is the windows. They are high-quality fiberglass frame, triple-glazed units by Winnipeg-based [Accurate Dorwin](#). Everyone who worked on this project was impressed with the quality and performance of these windows and we will definitely use them again.

The exterior siding is fibercement made to look like wood siding. The sustainability highlight of this product is its extreme durability, which means less material waste over time. They are zero maintenance panels with no painting required, and no issues with fire, rot or termites.

Heating for the home is provided by an in-floor system driven by a natural gas, super high-efficiency boiler, which also heats the domestic hot water. With such cold winters, most houses in Calgary would augment an in-floor heating system with a forced air furnace, however the superior insulation and air tightness of this home makes its heating demand low enough to be served perfectly well by in-floor heating alone. What's more, the investment in extra insulation resulted in significant savings by eliminating the need for a furnace and ductwork. For added comfort we installed a wood-burning fireplace insert with brick surround in the Living Room. This well-sealed unit does not detract from the air tightness of the home, and provides a warm and cozy atmosphere.

Finally, the house is fitted with an Energy Recovery Ventilator (ERV) to circulate, replenish and exhaust the air throughout the home, an important task for such a well sealed building. The ERV brings in fresh air from outside and tempers it with heat recovered from outgoing exhaust air.

Since Calgary never gets very humid and summer temperatures don't get very high, air conditioning was not a requirement to create a comfortable summer interior for this home. In fact, Calgary is so dry that holding onto humidity is the bigger task. The ERV system that keeps ventilation flowing throughout the house is also equipped to maintain a healthy moisture level. It works by capturing the humidity from exhaust air and putting it back into incoming fresh air. In a place as dry as Calgary, maintaining comfortable humidity levels is crucial to creating a healthy, eco house interior for this growing family.



In conclusion, we would like to share the clients' own thoughts. We thoroughly enjoyed working with this couple and wish them many years of happiness in their new Environmentally Integrated Home:

"Dear Christine and Tom,

We wanted to write and thank you for guiding us through the home building process. We found the entire process to be nearly stress-free and the two of you were so easy to work with. We very much appreciated your attention to detail, your assistance with everything from the choice of insulation to faucets to paint color.

You spent time getting to know how we live and what our tastes are and designed a home that reflects both. We enjoyed the collaborative process and could not be more pleased with the beautiful home that was built within budget and on-time - a rarity according to many others we know who've built homes.

We have been in our new house for about 6 months now and the work that was put into designing a home that was specifically for us and the way we live is evident. It is such a joy to come home to a house that functions so seamlessly with our everyday lives. It is clear that not just the overall layout, but that each room, each closet, each space in the house was thought about.

We are very pleased with the energy rating the house received. Our old house was so poorly insulated that it was easy to guess the outside temperature from the inside - the furnace was blaring, the doors and windows had condensation, or even ice. In the new house, we often say, "what is the temperature outside?" because the house is so comfortable and the temperature so consistent, that it could be -25 or +25 outside and we could not tell the difference."

