Green & Natural Construction
Fourth Pig Green & Natural Construction is a different kind of builder. Our mission is to foster ecologically balanced methods of construction and energy production in order to promote more sustainable and healthy communities.

Our work is based on natural and green building techniques and materials, recognizing a building as a system. We create high performance energy efficient buildings with low embodied carbon. The result? Comfortable buildings that are good for the planet and good for your health.

We build, renovate, consult and educate. The scope of our construction work includes custom homes, additions and renovations for residential and commercial clients as well. We are trained and experienced with passive house building, net zero and carbon zero buildings. Our involvement can range from managing an entire project from initial visioning through an integrated design process from start to finish, to constructing a specific component of a project (such as straw bale walls or earth plaster), to consulting on energy efficiency, and more. We do work educating the public on sustainable building including presentations and workshops.

At the Fourth Pig we are especially focused on excellent communication. From our project software for clients and partners, to our transparent billing, to simply promptly returning phone calls, we keep the lines open.

Fourth Pig Green & Natural Construction (worker co-op)
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All photos by Riley Snelling unless noted.
Testimonials

For the major renovation of my house I wanted to end up with a home that was healthy, comfortable, durable, low maintenance with low energy costs, and beautiful. I got it all. The Fourth Pig is a conscientious, transparent and reliable contractor that honestly practice what they preach when it comes to green building.

~ Tara, home owner

Although we have had several companies do work for us in the past, The Fourth Pig is the only company that I ever want to invite back for future projects.

~ Mark Chandler, homeowner

I have worked with the Fourth Pig for years now. They are a passionate group of people concerned with both the environment and great construction. Not only are they straw bale experts as their name suggests, they can tackle all forms of residential construction.

~ Terrell Wong, architect, Stone’s Throw Design Inc.

We would recommend the Fourth Pig without reservation to anyone looking for a builder.

~ Sherri and Joe, homeowners

You and your crew did a sensational job. We’re really impressed with the craftsmanship on this one. Really, well done.

~ Jonathan, homeowner

What a great experience we had with Fourth Pig. We cannot recommend them highly enough to anyone that is looking to do any kind of renovation.

~ Florencia and Kellie, homeowners

From passive house to net zero we work to make your building comfortable and healthy. We can renovate your building, build a new one, consult on a project and teach a team or present a talk.
SUPER EFFICIENT ENERGY RENOVATION WITH STRAW BALE WRAP AND STRAW BALE ADDITION

Muskoka, Ontario

We converted this leaky and poorly insulated '60s home in Lake of Bays Muskoka to a quiet, comfortable year-round family haven through a combination of straw bale wrap, dense pack cellulose, an additional exterior wall and straw bale insulated addition.

Windows and doors feature FSC wood frames with environmentally friendly finishes, aluminum cladding, triple glazing, and thermally broken and insulated frames. We modelled the home in the passive house software, PHPP, to help us maximize our energy savings. We used FSC lumber and No Added Urea Formaldehyde (NAUF) sheet goods, zero VOC eco-friendly adhesives, finishes, sealants, and tapes.
The exterior lime stabilized earth plaster received a custom colour coat of our on-site manufactured lime paint.

LED fixtures were installed throughout. FSC Eastern white cedar siding trims out the windows and doors for a modern cottage look that will withstand the test of time.
This fireplace is a wood fired boiler, which also heats the domestic hot water and water for radiant heating baseboard heaters.
The interior walls are finished with a clay based earth plaster. The exterior walls are finished with a clay-based plaster with lime stabilization. Limecrete was used for slab floors in basement (treated with hemp oil, citrus solvent, and carnauba wax floor finish). Interior retaining walls were made with rammed earth. Lath and plaster were used for all interior walls to improve sound quality, improve durability and avoid toxins, mold vulnerability and the embodied energy of drywall.

The house contains an Energy Recovery Ventilator. Energy efficient lighting and electrical were used including LED lights, and BX wiring. Steel roofing and sheet metal chosen for longevity, durability and recycling. Examples of materials repurposed from the deconstruction aspects of the project included lumber, used for such things as interior wall framing and blocking, chimney bricks, laid as a mechanical room floor, and plywood, used for form work. Initial third party air tightness testing gave results of under 1 ACH, the standard for passive house retrofit certification and over twice as airtight as the Energy Star standard.
DEEP-ENERGY RETROFIT
WITH STRAW BALE ADDITION
Toronto, Ontario

Durability, quality, energy efficiency, comfort and long lasting beauty were priorities for this extensive renovation and addition on a historical home in dire need of repair.

This project involved a deep energy retrofit of all but two rooms and a modern large two story rear addition. The historical front facade was restored.
For this renovation historical trim was salvaged, restored and reinstalled, and original century lime plaster was repaired and restored. The straw bale walls were finished with a smooth, clean modern look with lime plaster. All other interior walls were finished with veneer plaster (lime and plaster of paris). Limewash paints were applied on the straw bale, zero VOC paints were used on the rest of the house.

The high energy efficiency lighting design incorporated LED bulbs and fixtures exclusively. We used materials from the original home including radiators, some lumber, and interior doors and trim. A sun tube was installed to let natural light efficiently and beautifully into a windowless bathroom. FSC flooring was used throughout the home.
As per our standard, attention was paid to all air sealing details. Even without renovating two exterior rooms of the home we achieved a better than energy star air tightness as measured with third party testing.

The project included triple pane windows and a highly energy efficient energy recovery ventilator (ERV). We used FSC certified lumber and wood products and more environmentally sound choices for adhesives, finishes, sealants and tapes.
Straw bale insulation allowed us to cost effectively achieve a masonry exterior finish on this modern addition that provides, among other excellent qualities, superb insulation and sound attenuation while exceeding the fire code requirements. The bales were later finished with a lime plaster coat.
FROM A BARN TO A BREWERY

Caledon, Ontario

We transformed an old horse barn into an energy efficient brewery. GoodLot Farmstead Brewing makes hyperlocal beers, growing their ingredients on their organic farm or getting them locally. Now GoodLot is one of Canada’s first 100% electric brewery with onsite solar power.

The brewery is airtight, designed to meet passive house standards with super insulated walls and roof (R40) and R60 attic. We focused on using recycled and recyclable materials. We used lower carbon concrete - with a 60% carbon reduction over typical concrete, recycled content rebar, recycled content galvalume interior wall, ceiling lining of brewery, and exterior foundation skirt. FSC wood is used where it was not possible to use re-purposed existing wood materials.

Windows and doors are passive house standard triple glazed wood aluminum clad. LED lights are used throughout. Finally we used durable non-toxic finishes on the interior. Insulation included denim batt and cellulose. Perlite was used for under slab basement insulation and to insulate block walls.

Photos: Jesse Matthews
The Fourth Pig acted as the air tightness consultant and air barrier installer for the Parkdale Landing project, which is to date (2019) the largest passive house retrofit in Canada. We worked with owners Indwell, architect Invizij and general contractor Schithuis Construction to ensure the air barrier met passive house air tightness standards. The building exceeded the requirements of 0.6 ACH, coming in at 0.3 ACH at 50 Pascals.
Parkdale Landing is now 57 affordable apartments with commercial space on the ground floor.

In 2018 Parkdale Landing Project won the Inspiring Home Award from the Canada Green Building Council and the Award of Merit for Renovation Institutional by the Hamilton-Burlington Society of Architects.
This project was an early 20th century home in general need of repair, with damaged walls, very little insulation, old carpet and a bathroom and kitchen in significant disrepair.

We super insulated the top floor with cellulose and used denim insulation on the ground floor. The bathroom and kitchen were completely renovated and updated to a modern design.

Specialty touches added a high end discerning look to a project with a conservative budget. Semi-custom low formaldehyde and low-VOC cabinetry allowed for savings while still achieving a high quality finish with custom aesthetics. New triple glazed fibreglass windows greatly improved the comfort and function of the home.

A live edge reclaimed countertop finished with natural oils compliments the beautifully rustic conservation grade hickory flooring in the kitchen. The custom bathroom countertop and storage cabinets were made from reclaimed wood.

Walls were finished with lime and earth plasters, LED lighting was installed.
The Fourth Pig worked with the West End Food Co-op to create a thriving community store space. An unfinished basement used for storage was converted into a store. Health, durability, function, light and beauty were important drivers for the design for this project, along with a lean budget. Earth plaster was used throughout the renovation on walls and columns. A lime wash was applied to the ceiling to brighten the space and provide anti-mould properties on the cementitious surface. The concrete floor was treated with an environmentally friendly sealer. We built an accessible washroom and office space, installed new ventilation to meet the fire code, and constructed a commercial kitchen.
The Fourth Pig worked with the MNGFC in Huntsville to help them realize their vision of a healthy, welcoming, engaging space. The renovation involved creating a community food hub with a grocery market, cafe and commercial kitchen. Our team worked alongside other local trades and co-op volunteers on carpentry, millwork, and clay plastering. We provided expertise on the selection and installation of sustainable building materials, for example healthy finishes applied to bamboo countertops donated by Nadurra Wood.
Beyond making it beautiful, the main purpose of the renovation was to improve the air tightness and thermal performance of the building envelope using non toxic and carbon sequestering materials, which in turn dramatically improved both occupant comfort and seasonal operating costs for heating, cooling & ventilation.

The building was wrapped in a high performance membrane, which is vapour open and extremely waterproof and airtight. Triple pane high performance windows were installed and insulated with natural sheep wool insulation. Two heat recovery ventilators were installed. Wood fibre board was used on the exterior, with horizontal wood siding on the lower portion. Shou sugi ban charred cedar wood siding provided a beautiful protective finish on the upper portion.
ANOTHER SEASONAL COTTAGE GREEN RENOVATION
Muskoka, Ontario

A ‘Madmen meets Muskoka’ cottage renovation. Starting with an unfinished basement and code and cosmetic updates for the upper level, we super insulated the basement with rockwool batt and drainboard for a thermal bridge-free wall system. The walls were air sealed with a low-VOC vapour permeable paint on membrane system. Windows were replaced with triple glazed fibreglass units for comfort and energy efficiency. Reclaimed wood clad beams created a chase for energy efficient LED pot lights.

FSC engineered flooring was installed for beauty and longevity. A natural stone piece, traded for a donation to Habitat for Humanity, was inlaid and custom scribed to the flooring for the hearth.

The newly insulated walls were hand plastered with a slight skip trowel finish with gypsum/lime veneer to match existing walls that received a fresh coat of clay based paint.
In the east end of Toronto we renovated a turn-of-the-century house, creating a new comfortable healthy home with passive house levels of air tightness. We turned the basement into a new apartment style unit and converted the existing attached garage into a new kitchen with a connection to the house and converted the old kitchen into a new laundry, accessible washroom and pantry on the main floor.

The build featured natural sustainable hardwood floors, formaldehyde free kitchen cabinets with water based lacquer and paint, LED lighting, heated floors throughout the new work, a new insulated basement concrete slab (containing 60% less Co2 emissions than conventional concrete) and more. A dedicated ERV system was installed to provide fresh filtered air to the basement. As with all our projects, focus was given to waste reduction and diversion. For this project, over 83% of total waste was diverted from landfill and recycled (the industry standard is about 12%).

Architect: Stone’s Throw Design
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