

OTTAWA ADDITIONS

Structural & Engineering

Questions about load-bearing walls, structural beams, engineering requirements and roof modifications

17 Expert Answers from Addition IQ

ottawaadditions.com/construction-brain

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Do I need an engineer's stamp for an Ottawa addition?

Structural engineering is one of the most important — and most misunderstood — requirements in Ottawa home addition projects. The short answer is: **yes, in most cases you will need stamped engineering drawings**, and the more complex your addition, the more engineering involvement you should expect.

When a Structural Engineer's Stamp Is Required

The City of Ottawa's Building Code Services division reviews permit applications against the Ontario Building Code, and Part 4 of the OBC governs structural design for buildings that exceed the prescriptive limits of Part 9 (the residential section). For straightforward single-storey additions that fall within standard spans, loads, and configurations, a skilled designer or architect may be able to produce drawings that satisfy the city without a full engineer's stamp. However, **the moment your project involves any of the following, a Professional Engineer's stamp becomes essentially mandatory**: second-storey additions, removal of load-bearing walls, new foundation design in challenging soil conditions, large beam spans over 6 metres, roof modifications that alter load paths, or any addition that triggers a structural review of the existing home.

Ottawa's **Leda clay soil** — the sensitive marine clay deposited by the ancient Champlain Sea across much of the Ottawa region — is a particularly important trigger for engineering involvement. Leda clay can lose significant bearing strength when disturbed during excavation, and a geotechnical engineer may be required alongside your structural engineer to assess soil conditions and specify appropriate foundation design. This is especially relevant in older neighbourhoods near the Ottawa River, in Gloucester, and in parts of Kanata and Barrhaven where Leda clay deposits are common. Foundation footings in Ottawa must reach **1.2 to 1.5 metres below grade** to clear the frost line, and in Leda clay areas, the engineer may specify deeper footings, helical piles, or engineered fill to achieve adequate bearing capacity.

For **second-storey additions**, engineering is non-negotiable. The existing foundation, main floor framing, and exterior walls must all be assessed to confirm they can carry the new load above. It is not uncommon for an engineer's assessment to identify that the existing foundation needs underpinning or that the main floor beam sizing is insufficient — discovering this after construction begins can add **\$20,000 to \$50,000** in unexpected costs. Getting the engineering done upfront, before finalizing your design, is one of the best investments you can make in a second-storey project.

Structural engineering fees in Ottawa typically run **\$3,000 to \$8,000** for a residential addition, depending on complexity. Second-storey additions and projects requiring geotechnical assessment sit at the higher end. This cost is a small fraction of a total addition budget of \$150,000 to \$350,000, and the stamped drawings are a legal

requirement for your permit application regardless.

From a practical planning standpoint, engage your structural engineer **before finalizing your architectural drawings**, not after. Engineers and architects work best collaboratively from the start — having the engineer review the design intent early prevents expensive revisions when structural realities conflict with the initial design. Your permit application to the City of Ottawa will require both the architectural drawings and the structural package, and the city's reviewers will flag any missing engineering documentation during their 4 to 8 week review period.

Even for smaller additions that might technically qualify under prescriptive Part 9 rules, many experienced Ottawa contractors recommend getting an engineer's review anyway. The cost is modest, the liability protection is significant, and the peace of mind — knowing your addition is properly engineered for Ottawa's heavy snow loads and extreme temperature swings — is genuinely valuable.

If you're ready to start connecting with structural engineers or addition contractors in Ottawa, the **Ottawa Construction Network directory at justynrookcontracting.com** lists professionals across relevant trades and is free to browse.

Q2

Removing a load-bearing wall for an Ottawa addition, what is involved?

Removing a load-bearing wall as part of a home addition project is one of the most structurally significant decisions you will make, and in Ottawa's climate and regulatory environment, it requires careful planning, licensed professionals, and proper permits at every step. The good news is that it is done successfully every day in Ottawa homes — but only when approached correctly.

What Actually Happens When You Remove a Load-Bearing Wall

A load-bearing wall carries the weight of the structure above it — floors, roof, and sometimes a second storey — and transfers that load down to the foundation. When you remove it to open up space for an addition connection or create a larger interior, that load does not disappear. It needs a new path to travel down to the ground, which means installing a properly engineered **beam** to span the opening, supported by **posts** on each end, which in turn transfer the load through the floor system down to the foundation. If the foundation cannot handle the concentrated point load at the post locations, new footings must be dug — and in Ottawa, that means going down **1.2 to 1.5 metres** below grade to get below the frost line.

The process begins with a **structural engineer's assessment**, which is non-negotiable for this type of work. The engineer will determine what the wall is carrying, calculate the required beam size, specify the post and footing

requirements, and produce stamped drawings that your contractor and the City of Ottawa building inspector will rely on. Engineering fees for this scope of work typically run **\$800 to \$2,500** depending on complexity.

The beam itself is most commonly a **laminated veneer lumber (LVL) beam** or a **structural steel beam** for larger spans. An LVL beam for a typical 4 to 6 metre opening costs **\$800 to \$2,500 for materials**, while a steel beam for a longer span or heavier load can run **\$1,500 to \$5,000 installed**. The installation requires temporary support walls on both sides of the existing wall while the work is underway — skipping this step risks catastrophic movement in the structure above.

Permits and Ontario Building Code Requirements

A building permit from the City of Ottawa is required for any load-bearing wall removal. The permit application must include the engineer's stamped drawings, and the work will be subject to at least one — and typically two or three — inspections by a City of Ottawa building inspector. Permit processing for a straightforward structural modification typically takes **4 to 8 weeks**, so plan this into your project timeline well in advance of your target start date. You can reach Ottawa Building Code Services through 3-1-1 or apply through the City's online portal.

The **Ontario Building Code Part 9** governs the structural requirements for residential construction, including load path continuity, beam sizing, connection hardware, and footing design. Your engineer's drawings will reference these requirements explicitly, and the inspector will verify compliance before authorizing the work to proceed.

Practical Tips for Ottawa Homeowners

Budget **\$8,000 to \$25,000** for the full scope of a load-bearing wall removal, including engineering, permits, temporary supports, beam and post installation, new footings if required, and finishing work to restore drywall, flooring, and trim on both sides. If the wall contains electrical wiring, plumbing, or HVAC ducts — which is common in Ottawa homes — those trades need to be rerouted before the wall comes down, adding cost. An ESA-licensed electrician must handle any electrical work under a separate ESA permit.

One Ottawa-specific consideration worth flagging: older homes in neighbourhoods like **Westboro, Hintonburg, Glebe, or Old Ottawa South** often have foundations that were not designed for concentrated point loads. What looks like a simple beam installation can reveal a foundation that needs reinforcement, which is why the structural engineer's assessment before you start is so valuable — it surfaces these issues before they become mid-project surprises costing **\$20,000 to \$50,000** in unexpected work.

This is exactly the kind of project where having an experienced addition contractor coordinate the structural engineer, trades, and permit process pays for itself. The Ottawa Construction Network directory at **justynrookcontracting.com** lists contractors who work on addition and structural modification projects in the Ottawa area — a good starting point as you build your team.

Is my party wall a problem when adding to an Ottawa semi?

Party walls are one of the most important — and most frequently overlooked — considerations when adding onto a semi-detached home in Ottawa, and yes, they absolutely need to be addressed before your project moves forward.

Understanding Your Party Wall in an Addition Context

A party wall is the shared structural wall that divides your semi-detached home from your neighbour's. In Ottawa's housing stock, which includes a large number of post-war semis in areas like Alta Vista, Carlington, Elmvale Acres, and Bells Corners, as well as older brick semis in Centretown and Glebe, this wall is almost always load-bearing and often forms part of both homes' structural systems simultaneously. When you plan an addition, the party wall becomes relevant in several ways depending on where and how you are building.

If your addition is at the rear of the home — the most common scenario for Ottawa semis — the party wall itself may not be directly affected, but the **existing load path through your home** almost certainly runs through or along it. Any modification to interior walls, any new beam installation, or any change to how your roof connects to the existing structure needs to account for the party wall's role in carrying loads. A structural engineer needs to assess this before any framing decisions are made, because disturbing a load-bearing party wall without proper temporary shoring can cause serious structural damage to both homes simultaneously.

If you are planning a **second-storey addition**, the party wall situation becomes significantly more complex. In many Ottawa semis, the party wall does not extend fully through the attic space — it terminates at ceiling level, with both homes sharing a common attic or with only a partial fire separation above. Adding a second storey means you will need to extend the fire separation through the new structure, which the **Ontario Building Code Part 9** requires to be a minimum one-hour fire-rated assembly between attached dwelling units. This typically means two layers of 5/8-inch Type X drywall on the party wall side, continuous from foundation to roof deck, with no gaps or penetrations that are not properly fire-stopped.

From a legal standpoint, Ontario does not have a dedicated Party Wall Act the way the United Kingdom does, so your rights and obligations are governed by your property deed, any easement agreements registered on title, and general property law. Before starting any addition work, you should **review your title documents** to confirm whether any party wall agreements or easements exist. Your real estate lawyer can pull this information. While you are not legally required to notify your neighbour before building an addition in most Ottawa cases, doing so is strongly advisable — a neighbour who discovers construction affecting a shared wall after the fact can create costly disputes and potential stop-work orders.

Practically speaking, Ottawa's climate adds another layer of concern at the party wall junction. The thermal boundary of your addition must be carefully detailed where it meets the party wall, because this is a common location for **condensation and air leakage** if the vapour barrier and insulation are not continuous. In Ottawa's winters, where temperatures can sit below minus 20 degrees Celsius for extended periods, a poorly detailed party wall junction in a new addition will show up as cold spots, frost, or moisture damage within the first heating season.

The foundation work for a rear addition on a semi also requires care near the party wall footings. Ottawa's frost line sits at **1.2 to 1.5 metres below grade**, and your new footing must not undermine or disturb the existing party wall footing. An engineer will specify the required separation and depth to ensure both structures remain stable.

The most important practical step you can take right now is to hire a **structural engineer** for a pre-design assessment — not after you have drawn up plans, but before. This assessment, which typically costs **\$800 to \$2,500 in Ottawa**, will identify exactly how the party wall functions in your home's structure, what fire separation requirements apply, and whether any easement issues need legal resolution. It is money that prevents far larger surprises mid-construction.

For finding experienced addition contractors who understand Ottawa semi-detached construction, the Ottawa Construction Network directory at **justynrookcontracting.com** is a good starting point for browsing local professionals across general contracting, structural engineering, and related trades.

Q4

Do I need a structural engineer before building an addition in Ottawa?

Looking for experienced contractors? The Ottawa Construction Network connects homeowners with qualified professionals:

- Justyn Rook Contracting
- JC Carpentry
- Renovo Construction
- Pure Flow Water Solutions inc.
- Capital City Drywall

[View all contractors ?](#)

Q5

How do I know if my Ottawa home's foundation can handle a second-storey addition?

Looking for experienced contractors? The Ottawa Construction Network connects homeowners with qualified professionals:

- 613Bins
- JC Carpentry
- Custom By Arie
- Speedy Pete's Inc
- Steven Labelle - Your Complete Home Renovator

[View all contractors ?](#)

Q6

What are the load-bearing wall considerations when opening up for an addition in Ottawa?

Looking for experienced contractors? The Ottawa Construction Network connects homeowners with qualified professionals:

- Homeupgraders
- RenoMotion Inc.
- M.O.T. CONSTRUCTION INC.
- Somar Contracting Inc.
- Custom By Arie

[View all contractors ?](#)

Q7

Can I remove a load-bearing wall to connect my addition to my Ottawa home?

Looking for experienced contractors? The Ottawa Construction Network connects homeowners with qualified professionals:

- Luxe Painting and Renovations
- JC Carpentry
- BFI Renovations
- Transitions Renovations
- The Granite shop

[View all contractors ?](#)

Q8

What size beam do I need to span an opening between my house and new addition in Ottawa?

Looking for experienced contractors? The Ottawa Construction Network connects homeowners with qualified professionals:

- Justyn Rook Contracting
- RenoMotion Inc.
- Capital City Drywall
- Dump n Dash Hauling
- Geerts Roofing Inc

[View all contractors ?](#)

Q9

What happens if my contractor finds asbestos during my addition project in Ottawa?

Looking for experienced contractors? The Ottawa Construction Network connects homeowners with qualified professionals:

- Justyn Rook Contracting
- JC Carpentry
- Demontigny Carpentry
- Callandgone
- Geerts Roofing Inc

[View all contractors ?](#)

Q10

How do I prevent moisture problems where my addition meets my existing Ottawa home?

Looking for experienced contractors? The Ottawa Construction Network connects homeowners with qualified professionals:

- Homeupgraders
- JC Carpentry
- Leeds Property Maintenance
- Jaiko Cleaning Services
- Dump n Dash Hauling

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Q11

What snow load rating does my addition roof need in Ottawa?

Looking for experienced contractors? The Ottawa Construction Network connects homeowners with qualified professionals:

- Justyn Rook Contracting
- RenoMotion Inc.
- JMY Renovations
- Steven Labelle - Your Complete Home Renovator
- Titley Construction

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Q12

How do I prevent ice damming on my addition roof in Ottawa?

Looking for experienced contractors? The Ottawa Construction Network connects homeowners with qualified professionals:

- Homeupgraders
- JC Carpentry
- Home Front Services
- The Granite shop
- The Next Reno

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Q13

How do I ensure my addition roof ties into my existing roof properly in Ottawa?

Looking for experienced contractors? The Ottawa Construction Network connects homeowners with qualified professionals:

- 613Bins
- JC Carpentry
- L.L. Renovation
- The Next Reno
- JMY Renovations

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Q14

Can my existing floor joists support the weight of a new bathroom above in Ottawa?

Looking for experienced contractors? The Ottawa Construction Network connects homeowners with qualified professionals:

- Homeupgraders
- JC Carpentry
- The Fixer
- JMY Renovations
- Valcor Construction

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Q15

What are the wind load requirements for a second-storey addition in Ottawa?

Looking for experienced contractors? The Ottawa Construction Network connects homeowners with qualified professionals:

- Homeupgraders
- RenoMotion Inc.
- Steven Labelle - Your Complete Home Renovator
- Best Hand2Hand moving company
- Pure Flow Water Solutions inc.

[View all contractors ?](#)

Q16

Do I need steel beams or can I use engineered wood for my Ottawa addition?

Looking for experienced contractors? The Ottawa Construction Network connects homeowners with qualified professionals:

- Homeupgraders
- RenoMotion Inc.
- Joe Imerti Contracting
- Leeds Property Maintenance
- L.L. Renovation

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Q17

How does Ottawa's heavy snow load affect the roof design on my addition?

Looking for experienced contractors? The Ottawa Construction Network connects homeowners with qualified professionals:

- 613Bins
- JC Carpentry
- Denys Builds Designs Renovations
- Vanguard Environmental
- ARTEXPRO Tile & Finishes

[View all contractors ?](#)

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