BILD EDMONTON METRO

FOUNDATIONS OF BUILDING & CONSTRUCTION

The Dirt to Door Series offers a unique, behind-the-scenes look at what it takes to build thriving communities from the ground up. Through guided tours and expert-led discussions, participants explore various places across our region learning how community builders create identity, support business retention, and design vibrant, people centered places.

This series also dives deep into the land development process, covering everything from planning and zoning to housing typologies, streetscapes, parks, and other critical infrastructure. It's an immersive experience that connects policy, people and community, showcasing how great neighbourhoods come to life.

WHAT WE'RE LEARNING TODAY

- Excavation
- Footing and Foundation
- Framing and Lock-up
- Mechanical, Electrical, Plumbing

Building better homes starts with planning, communication, and execution. Every phase — excavation to mechanical, electrical, and plumbing — has its own rhythm, rules, and risks. When trades and builders understand each other's needs and challenges, homes go up faster, stronger, and safer.

BILD EDMONTON METRO

BILD Edmonton Metro, or Building Industry and Land Development Edmonton Metro, is the voice and expert resource of the real estate development industry. Our more than 500+ member companies are from all corners of the industry – real estate developers, home builders, renovators, financial and professional service organizations, trade contractors, and manufacturers and suppliers of all types of commercial and home-oriented products.

EXCAVATION

Time Frame for Excavation

Excavation typically takes 3–5 working days, depending on soil conditions, weather, and site access. Coordination with utility providers and scheduling site prep is essential.

PIP Information – Why It Matters

A Project Implementation Plan (PIP) from the City of Edmonton is a comprehensive document that outlines the key requirements, timelines, and coordination details necessary for initiating and completing a residential or commercial construction project. It includes critical information such as approved grading plans, utility servicing locations, zoning regulations, and compliance conditions tied to development permits. The PIP ensures that all stakeholders—including builders, trades, and inspectors—are aligned on expectations before construction begins, helping to reduce delays, prevent errors, and support safe, compliant development within city standards.

Community and External Factors

- Noise bylaws and dust control in residential areas
- Seasonal access issues and frost depths
- Coordination with developers, municipalities, and neighbours to minimize disruptions

Innovations in Excavation

- GPS-enabled excavation equipment for precision grading
- Hydrovac services for safer utility exposure
- Use of recycled fill materials and erosion-control mats

FOOTING AND FOUNDATION

Time Frame – When It Happens

Foundations are poured after excavation, typically within 1 week. Cure time adds 1–2 weeks depending on weather.

What Concrete Is Used and Why

- 25–30 MPa concrete is standard
- Additives like air entrainment improve freeze-thaw resistance in Edmonton's climate
- Water reducers help with cold weather pours

Coordination Challenges

- Poor handoff between excavation and foundation crews can cause delays
- Incorrect elevations or missing engineering sign-offs often hold up the pour
- Inspectors and surveyors must be aligned on timelines

FRAMING / LOCK-UP

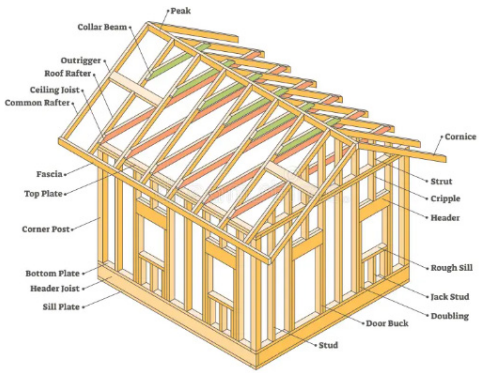
ACQ Prefab – Why It Matters

ACQ (Alkaline Copper Quaternary) treated wood is used to resist rot and pests, essential for base plates and outdoor framing. Prefab wall and truss systems speed up timelines and reduce framing errors.

Framing Components

- Walls, floor joists, roof trusses
- Windows and door rough-ins
- Stairs and sheathing

Lock-up means the structure is closed to weather: roof on, windows in, doors installed.



Timelines

Framing takes 2–3 weeks for standard homes, weather permitting.

Material Sourcing Challenges

U.S. supply chains can be unpredictable due to tariffs, demand spikes, and transportation delays. Local sourcing or bulk pre-orders can help avoid disruptions.

Doors, Windows & Siding

- Rough opening sizes must match supplier specs
- Exterior finishing materials must account for R-value and moisture barriers
- Siding often delayed due to backordered products – consider alternatives or dual sourcing

MECHANICAL, ELECTRICAL, AND PLUMBING

Why Trades Need Their Own Time

Overlapping trades cause: safety risks, delays from rework, and damage to unfinished installations. Staggered scheduling and trade-specific prep meetings reduce these issues.

Complexities of This Phase

- HVAC requires correct ducting paths before framing closes in
- Electrical boxes, plumbing vents, and drains must match final plans
- Code inspections vary and must be booked in advance

Improving the Build Process

- Clear communication between site supervisors and trades
- Daily site checks to ensure previous trade work is complete
- Use digital project management tools to track tasks and milestones

Rightsizing Equipment

Oversized HVAC systems or water heaters cost more and reduce energy efficiency. Use load calculations (Manual J for HVAC) to properly size equipment.

Wireless Lighting Swatches – Efficient or Not?

Wireless systems offer: easy upgrades, fewer wires, and flexible placement – but can be costlier and rely on homeowner tech savviness. Use where appropriate.

What Plumbers Want from Others

- Unobstructed access to wet walls and mechanical rooms
- No framing over vent runs
- Accurate slab rough-ins to prevent rework

INSTRUCTOR'S NOTES

Survey - Stakeout
When builders are ready to begin construction on a serviced lot, a survey crew is called to prepare the site:

- Survey Stakes mark where to dig the foundation. They guide the excavator to depth and location.
- Stakes show footing depth, ensuring proper foundation support.
- Lost or moved stakes can be an issue due to weather or curious kids.
- Detached garages or garage suites are typically staked at a later stage.
- After excavation, a safety fence is installed around the site to prevent accidents.

Foundation
The foundation is a critical part of any home, consisting of:

- Concrete Footings & Walls
  - → Typical footing: 18" wide x 8" deep
  - → Foundation walls: 8'–9' high x 8" thick
- Concrete Types:
  - → 25 MPa General Use (Cost-effective)
  - → 32 MPa High Sulphate Resistant (Preferred in Edmonton due to soil conditions)
- Damp Proofing Methods:
  - → Tar Spray: Common, low-cost sealant
  - → Dimple Wrap: Premium moisture barrier
- Drainage System:
  - → Weeping tile, rock, and sump pail collect and redirect groundwater.
  - → Sump pumps expel water to storm drainage or swales.

Framing
How the house comes together above the foundation:

- Framing Options:
  - → Stick Framing: Built on-site, cost-effective, but slower and more wasteful.
  - → Prefabricated Walls (ACQ): Built in factories, faster and less waste, but higher cost.
- Sheathing Materials:
  - → OSB vs. BarrierTek: Choice can affect fire resistance and durability.
- Windows & Doors:
  - → Glass Types: Dual-pane or triple-pane
  - → Styles: Casement, slider, picture windows
- Exterior Finishes:
  - → Siding: Stucco, Hardie panel, brick, stone
  - → Trim: Soffit, fascia, eavestroughs
- Roofing:
  - → Options include shakes, asphalt shingles, or metal roofing

Mechanical Systems
The systems that bring comfort and utility to the home:

- Heating & Cooling:
  - → Traditional systems are still common
  - → Energy-efficient options (Geo-thermal, heat pumps) are gaining popularity
- Plumbing:
  - → Not the flashiest, but low-flow toilets help conserve water
- Electrical:
  - → Powers lighting, appliances, and future smart home tech

FIELD NOTES