



STRUCTURAL ENGINEERING BASICS

Tips for Home
Owners



Load Bearing Elements

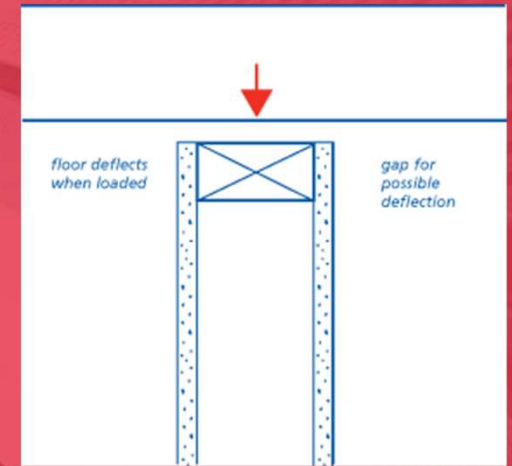
- Floor Joists
- Roof Trusses and rafters
- Beams
- Lintels
- Bearing walls
- How can these be identified?
- Teleposts/Columns





Partition Walls

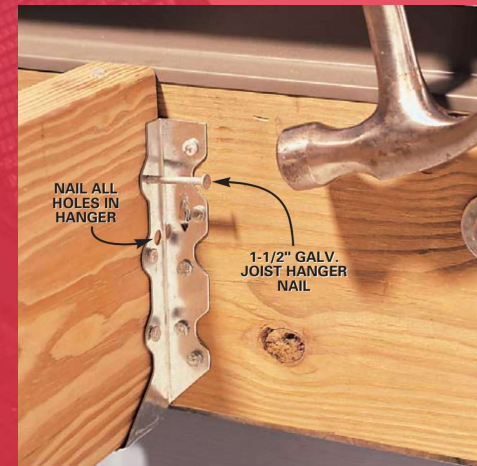
- Non load bearing element → not designed to transfer load
- Deflection gaps at the top of these walls are recommended, especially if the wall sits on a basement floor
- Weight of these walls should still be accounted for in design





Connections

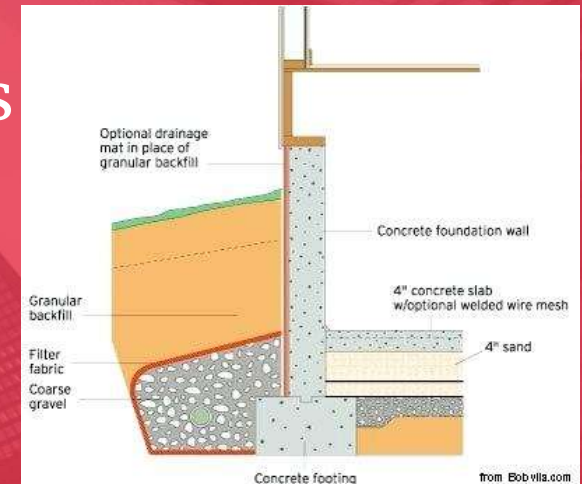
- Screws vs. Nails
- Galvanized nails/screws in pressure treated wood → prevents corrosion
- Joist/Beam Hangers





Foundations

– Footings vs. Piles
foundations for
deck/house?



– Basement slab-on-grade
– Foundation movement →
Presence of trees, change in soil
moisture due to low rainfall/snow



Foundations

- Underpinning
- Types of cracks → vertical, horizontal and diagonal (want to limit cracks, not eliminate them)
- Importance of weeping tile and sump pit





Permits

- Why are they so important?
- Ultimately for safety
- If done without a permit homeowner will have to provide appropriate documentation



Permits

- When do you need them?
- Additions
- Modifying doors/windows
- Removing/Modifying Walls
- Decks
- Underpinning