Framing a Roof

Architectural Drawing
Objectives

• Define **Ridge Board, rafter, hip, valley, sheathing, fascia, soffit, dormer, and pitch.**

• **Label and identify** the parts of a **roof framing plan.**
Parts of a Roof

• A **Ridge Board** is a horizontal member of the roof frame. The point at which all the *rafters* are attached to.

• Transfers the **load** of the roof through the *rafters* to **walls** below.

• **Ridge Beam** sits below the rafters. Supported by lally columns.
Ridge Board v.s Beam

Ridge Board

Ridge Beam
Rafters

- **Rafters** extend from the ridge beam down to the top plate of a wall. Transfers the roof load in the process.
- **Rafters** give the roof its shape and definition.
Fascia & Soffit

• **Fascia** hides the end of the rafter. Protects from weather & pests. Nailable surface for gutters.

• **Soffit** is the underside of a roof, balcony, or over hang.
Gable Roof

- A **Gable Roof** is when all rafters extend downward from the ridge board/beam.
- No Hips or Valley’s.
- Another default roof in archiCAD.

![Diagram of a gable roof with labels: fascia board, eaves overhang, gable overhang, Gable, bargeboard, Gable end.](image)
Hip Roof

• A **Hip** is a type of roof where all sides slope downward to the walls.

• Default wall in archiCAD.
Valley Roof

- A **Valley** is a roof design that creates a “V” shape.
- Often seen on complex roof shapes.
- Usually has a metal valley exposed.
Dormer

- A **Dormer** is a roofed structure that is used to increase the livable area in a home.
- Used in lofts and spaces where the roof pitch is steep leaving little room.
- Often contains a window to allow natural light.
Sheathing

- **Sheathing** is a layer of plywood or OSB that covers and protects the structure.
- Creates a nailable surface for roofing materials.
- Prevents shear forces.
Roof Pitch

• The **Roof Pitch** is the numerical measure of how steep or shallow a roof is.

• Vertical Rise over Horizontal Run.

• In the U.S it is defined by the rise in inches to a 12” run.

• **Example:** 3 inch rise per 12” run is a **3:12 pitch roof**.

• **4:12** through **9:12** are the most common pitches.
Roof Frame Plan

• Roof Frame Plan details the rafters and the spacing of the roof.
• Looked at from the birds eye view.

Notes:
The Ridge Board and Hip Rafters are 2 x 8 - #1 Spruce-Also-Fir mix (SPF), stress rated.
All other roof members are 2 x 6 SPF #2 or better.
Gable Roof Framing Plan
Gable Roof Framed
Hip & Valley Roof
Valley Framed
Hip Roof Framing Plan
Hipped Roof Framed
Different Types of Roofs

Roof Types

- Skillion and Lean-to
- Open Gable
- Box Gable
- Dormer
- Hip
- Hip and Valley
- Gambrel
- Mansard
- Butterfly
- Intersecting/Overlaid Hip
- Dutch Gable
- Hexagonal Gazebo
- Jerkinhead
- Flat
- Cross Hipped
- M shaped
- Saltbox
- Shed
- Combination
- Pyramid Hip