Anatomy of a Barn

Your Guide to Pacific Northwest Types, Styles & Character Defining Features

Michael Houser,
Washington State Architectural Historian

Sept - 2019
Barn

Forms and Types

Barn Roof Types

- Shed
- Gable
- Gambrel
- Gothic
- Monitor
- Half Monitor
- Combination
- Hip
Barn classification can be based on:

- Use/Purpose,
- Plan and shape,
- Framing system,
- Roof form — **DAHP method**
Barn - Forms & Types

**Gable** (sometimes referred to as an English / Yankee barn)

Shed, OR

Boyd, OR

Champoeg State Park, OR

Hillsboro, OR

Kitsap County, WA
Barn - Forms & Types

Gable (sometimes referred to as an English barn)

Adams County, WA
Adams, OR
Peirce County, WA
Lincoln County, WA
Skagit County, WA
Dayville, OR
Barn - Forms & Types

**Salt Box** (integrated lean-to)

Dayton, WA

Spokane County, WA

Wallowa Valley, OR

Brownsville, OR

Pierce County, WA
Barn - Forms & Types

Salt Box (integrated lean-to)

Benton County, OR

Finley National Wildlife Refuge, Benton County, OR

Philomath, OR

Waitsburg, WA

Poulsbo, WA
Barn - Forms & Types

**Dutch Barn** (roof projecting down to 1st floor)

- Stevens County, WA
- Dufur, OR
- Benton County, OR
- Snohomish County, WA
- LaPine, OR
Barn - Forms & Types

Dutch Barn  (roof projecting down to 1st floor)

Labanon, OR

Colfax, WA

Skagit County, WA

Victor Point, OR
Barn - Forms & Types

Broken Gable / Gable with High Lean-tos

Klamath Falls, OR
Mount Angel, OR
San Juan County, WA
Hayward, OR
Barn - Forms & Types

Broken Gable / Gable with High Lean-tos

Diamond, OR
Deschutes County, OR
Baker, OR
Walla Walla County, WA
Barn - Forms & Types

Gable-on-Hip

Drake Crossing, OR

Snohomish, WA

Coupeville, WA

Burnt Wood, OR
Barn - Forms & Types

Gable-on-Hip

Walla Walla County, WA

Weston, OR

Dufur, OR

Molalla, OR

San Juan County, WA
Barn - Forms & Types

English Gambrel

Thurston County, WA

Ellensburg, WA

Enterprise, OR

Donald, OR

Lynden, WA
Barn - Forms & Types

English Gambrel

Tangent, OR

Columbia County, WA

Near Crater Lake, OR

Lincoln County, WA
Barn - Forms & Types

**Dutch Gambrel** (note flare at eave line)

- Fairfield, WA
- Elgin, OR
- Grays Harbor, WA
- Willamette Valley, OR
- Scappose, OR
- Salem, OR
Barn - Forms & Types

**Dutch Gambrel** (note flare at eave line)

- Woodburn, OR
- Pendleton, OR
- Pend Oreille County, WA
- Troutdale, OR
- Island County, WA
Barn - Forms & Types

Gambrel w/Lean - To

Pierce County, WA

Mount Vernon, WA

Elgin, OR

Yakima County, WA

Deer Park, WA
Barn - Forms & Types

Gambrel w/Lean - To

Eugene, OR

Scholls, OR

Snohomish County, WA

Sheridan, OR
Barn - Forms & Types

**Hip**

- Coupeville, WA
- Condon, OR
- Moxee, WA
- Vancouver, WA
Barn - Forms & Types

**Gothic**  (pointed arch roof truss)

Keizer, OR

Lacey, WA

Vancouver, WA

Willamette Valley, OR

Wilbur, WA
Barn - Forms & Types

**Gothic** (pointed arch roof truss)

- Stayton, OR
- Colfax, WA
- Uniontown, WA
- Weston, OR
Barn - Forms & Types

Bow / Rainbow Truss
(note completely arched trusses)

King County, WA
Pullman, WA
Ridgefield, WA
Satsop, WA
Sedro Wooley, WA
Barn - Forms & Types

Western Barn/ Monitor Barn / Basilican

Stanwood, WA

Joseph, OR

Linn County, OR

Thurston County, WA
Barn - Forms & Types
Conical / Round / Centric Barns

Klickitat County, WA

Sisters, OR

Lostine, OR

Medical Lake, WA

Joseph, OR

Diamond, OR

St. Johns, WA
Barn Paint

LIFE IS COLORFUL DOWN ON THE FARM

Red, for the barn and sheds, stands out in beautiful contrast to the surrounding country. Neutral colors such as Brown, Olive, and Terra Cotta make nice in the animal stalls. Would Green house with White roof. White house have a picturesque look. Red Green with Garages and fences. White for the White house consider: Light Blue, Sage, or Warm White. For some nice color schemes, see our previous color charts. Barn Gray are nice. Fence is White. Colors blend together nicely.
Barn Paint

Use Gordon-Van Tine “Quality” barn paint and be assured of success with your painting.

Farmers judge each other by their barns. Keep your barn well painted. Everyone sees it and it’s the best evidence of thrift and “getting on.”

Our “Quality” brand barn paint is good and we know it. We don’t sell anything but good paint. It is equally good for shingles or metal roofs, fences, bridges, grain elevators and alike. It will lengthen the life of shingles and metal roofing. It is a wood preservative and will add years to the life of your building.

You may use this paint with perfect confidence, knowing that it will stand back of every can or barrel. Only the best ingredients are used. It is ground to an unsurpassed fineness and thoroughly mixed and remixed by the most up-to-date machinery.

One gallon of Quality barn paint can be depended upon to cover about 250 square feet of surface, two coats. Measure for it by the “square foot” method. You will never regret having given it a trial.

Barn Plans

- Farmer
- Itinerant Builder
- Architect
- Plan Service
- Extension Office
- Lumber Yard
- Factory Pre/Ready-Cut

**BLUE PRINTS AND COMPLETE SPECIFICATIONS**

**SHOULD BE USED WHEN BUILDING**

- Because you will know in advance how the building will look.
- Because you will know in advance what the building will cost.
- Because you will save money by saving the contractor's time.
- Because we can furnish these plans and specifications at such a low price that you cannot afford to do without them.

**Come to Our Office and Get Our Special Blue-Print Proposition**
Barn Plans
Ready Cut

Sears Roebuck and Co., Chicago
Sears & Roebuck - 1919

Fenner Manufacturing Co., Portland, OR - 1921

Fenner Barn No. 422

BARN No. 422, the standard size of which is 10x20, is a good sized barn for general use. The strong, neat, and well-adapted to the needs of those who will use it. The material is well selected, and the barn is fully equipped with all the necessary features. The roof is pitched, and the barn is well ventilated. The barn is designed to be practical and economical. It can be purchased at a reasonable price.

Gordon Van Tine- 1915
Jamesway Co.
Barn Roofing

- Wood Shake / Shingle
- Standing Seam
- Corrugated Metal
- Asphalt
Barn

Roofing – Wood Shingle / Shake
Barn

Roofing – Standing Seam

Sears & Roebuck Roofing Catalogue - 1908

Sears & Roebuck Roofing Catalogue - 1939
Barn Roofing – Corrugated Metal

EXTRA HEAVY Pressed Corrugated Steel—U. S. STANDARD WEIGHTS

Made in HEAVY GRADE (U. S. Standard 28-Gauge) and EXTRA HEAVY GRADE (U. S. Standard 26-Gauge).

Corrugated Steel is an Excellent Material for shear, bending, ceiling, siding, awnings, etc. It is especially durable for grain elevators, sheds, barns and similar buildings.

Cheap and Easy to Lay. It requires only a hammer and a pair of tongs; or rules to lay corrugated steel, or siding, in the usual way.

Extra Strong on Account of Construction. It is made in 1%4-inch Corrugated Steel Roofing. We Furnish Two Thicknesses:

Grades, or 26-Gauge, which is the standard weight (28-Gauge), as it costs but a little more, casts no more time in use, and gains more durability.

United States Standard 26-Gauge, which is heavier than the former grade of weight and thickness, and United States Standard 26-Gauge, which with shingles as extra heavy and which is slightly more flexible and heavier than the standard 28-gauge. We recommend the Extra Heavy.

A few points in order to order 100% square feet of 1%4-inch corrugated sheet. This is not the number of sheets, but the number of inches of corrugated sheet. Send per cent, or state your requirements when ordering, and we will charge you the correct amount.

1%4-Inch Corrugated Steel Sheet Put in Rolls, 10 formed feet, per roll. 4 rolls, per bale. 5 bales, per box. 10 bales, per carload.

TIN SHINGLES OR FLASHINGS

No. 49773. Made of 28-Gauge. For local service, as to size and weight, 18 inches long, or 16 inches long, or 15 inches long, or 14 inches long, or 13 inches long, or 12 inches long, or 11 inches long, or 10 inches long, or 9 inches long, or 8 inches long, or 7 inches long, or 6 inches long, or 5 inches long, or 4 inches long, or 3 inches long, or 2 inches long, or 1 inch long. Weight, about 95 pounds.

Corrugated Roof Roll to Fit 1%4-Inch Corrugated Steel Roofing. Made of 28-Gauge. For local service, as to size and weight, 18 inches long, or 16 inches long, or 15 inches long, or 14 inches long, or 13 inches long, or 12 inches long, or 11 inches long, or 10 inches long, or 9 inches long, or 8 inches long, or 7 inches long, or 6 inches long, or 5 inches long, or 4 inches long, or 3 inches long, or 2 inches long, or 1 inch long. Weight, about 95 pounds.

VALLEYS—IN ROLLS

Put up in rolls. Made in United States standard 28-gauge steel and extra heavy United States standard 26-gauge steel, 14 inches wide. Lock seam and soldered. For valleys and flashings. Shipped from our CHICAGO store.

GALVANIZED STEEL VALLEY

Cut in 4-foot lengths, at 18 inches centers, and 1%4-inch Corrugated. Made of 28-Gauge. For local service, as to size and weight, 18 inches long, or 16 inches long, or 15 inches long, or 14 inches long, or 13 inches long, or 12 inches long, or 11 inches long, or 10 inches long, or 9 inches long, or 8 inches long, or 7 inches long, or 6 inches long, or 5 inches long, or 4 inches long, or 3 inches long, or 2 inches long, or 1 inch long. Weight, about 95 pounds.

SEARS, ROEBUCK AND CO., CHICAGO, ILLINOIS.
Barn Roofing - Asphalt

Gordon-Van Tine Co. Catalogue – c.1924

Asphalt Roofing on the Farm – c.1950
Barn Framing / Truss System

- Log
- Heavy Timber Frame
- Pole Construction
- Plank Truss Frame
  - Braced Truss
  - Iowa Truss
  - Shawver Truss
- Concrete
- Clay Tile / Brick
- Plywood Rigid Frame
Barn Framing / Truss System

Fig. 1. Six types of barn roof trusses

Fig. 2a
Two types of Shawver truss

American Society of Agricultural Engineers

ASAE Annual Meeting – Dec 1918, J.L. Strahan
Barn – Framing/ Truss System

Log Framing

Saddle notch

V-notch

Half Dovetail notch

Diamond notch

Full Dovetail notch

Square notch
Barn – Framing/ Truss System

Heavy Timber - Framing

Timber Framing Diagram

- Ridge
- Collar tie
- Purlins
- Rafter
- Plate
- Knee brace
- Girt
- Posts
- Joist
- Sill Timbers

© 2011 MJ Logan
Barn – Framing/ Truss System

Pole Construction - Framing
Barn – Framing/ Truss System

Plank Framing - Gable Framing

1904
Barn – Framing/ Truss System

Plank Framing – Gambrel Framing
Barn – Framing/Truss System

Plank Framing - Gambrel Framing
Barn – Framing/Truss System

Braced Truss - Gambrel Framing

OSU Extension – Braced Truss
Barn – Framing/ Truss System

Iowa / Clyde Truss - Gambrel Framing

OSU Extension – Iowa Truss

Truss developed around 1920
Barn – Framing/ Truss System

**Shawver Truss - Gambrel Framing**

Truss developed late 19th Century
Barn Barn – Framing/ Truss System

??? Truss - Gambrel Framing

Other truss systems
Barn – Framing/ Truss System

Plank Framing - Gothic Arch
Barn – Framing/ Truss System

– Concrete: Poured & Block

<table>
<thead>
<tr>
<th>Barn</th>
<th>Block</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlas Portland Cement Company – 1916</td>
<td></td>
</tr>
<tr>
<td>Portland Cement Association – 1946</td>
<td></td>
</tr>
</tbody>
</table>

Poured
Barn - Details

Hay Hoods

Garfield County, WA

Benton County, OR

Linn County, OR

Klickitat County, WA

Graham, WA

Keizer, OR
Barn Ventilation

IN THE days of straw sheds when stock was not properly housed, very little attention was paid to pure air, and not much was known about its real food and life-giving value. It soon became apparent to those making a study of stock raising that these animals would be more productive when housed in warm buildings, and this is what has brought about the modern barn. It is true that the warm room has increased the product, for example, the flow of milk from the dairy cow; but this warm, tight building has also brought about a condition that breeds disease; and the disease is proving to be a menace to the stock and mankind.

It has been proved that pure air is two-thirds of a cow’s ration; in other words, for every pound of feed and water combined that is consumed it requires the oxygen from two pounds of pure air to properly assimilate this feed. It is true that no farm stock buildings are air tight; but if the stock can get only one-half the required amount of pure air, it would have the same effect as if they were given only a part of the feed and water they naturally require to sustain life and make them productive.

Much has been written on the subject of ventilation for farm buildings and many patents have been obtained for various mechanical ventilators. A few of these ventilators will be shown in the following articles.

Winn Barn, Weston, OR 1916

Sears & Roebuck Roofing Catalogue - 1908
Barn - Details

**Cupolas & Ventilators**

Whitman Co. - The Smith Place – 1935

Snohomish Co. - Grimm-Jensen Farm – 1932

Adams Co. - Krause Barn – 1901

Pierce Co. - c1923

Spokane Co. - Hyslop Farm – 1926

Pend Oreille Co. - LaPorte Barn – 1901
Barn - Details
Equipment

Cook Family Farm – 1927

Grimm-Jensen Farm – 1932

Shady Nook Farm – 1920

Schindler – 1909

Smith Place – 1935
Barn - Details
Decoration

Heath Farm – c.1920

Bolick Farm – 1895

Ebby Road Farm – 1923

Brown Farm, Olympia – c. 1905
Barn - Details
Decoration

Cochran-Rice Farm, Cottage Grove

Barn, Oakland, OR

Polson Farm, Waterville, WA – c. 1915

Gribble Barn, Canby, OR
Associated Farm Buildings

- Bunk Houses
- Fruit Dryers
- Granaries
- Hop Dryers
- Machine Shed
- Milk Houses
- Poultry Houses
- Root Cellars
- Silos
- Smoke Houses
- Water Towers
Associated Farm Buildings

- Woodshed
- Outhouse
- Granary
- Farmhouse
- Homestead Cabin
- Root Cellar
Silos - Typology
Silos - Typology

**Wooden Octagonal Silo**
Asotin Co. – c.1895

**Vertical Wood Stave Silo**
Clark Co. – c.1900

**King Silo**
Klickitat Co. – 1920
Silos - Typology

- **Brick Silo**
  Spokane Co. – 1919

- **Concrete Stave Silo**
  Pierce Co. – c.1920

- **Glazed Tile Silo**
  Clark Co. - 1920
Silos - Typology

Steel Paneled Silo
Pierce Co. – c.1935

Poured Concrete Silo
Grays Harbor Co. – c.1935

Harvestore Silos
Adams County - c. 1948
The Washington State
Department of Archaeology & Historic Preservation

Michael Houser, WA State Architectural Historian
360.586.3076 or michael.houser@dahp.wa.gov