





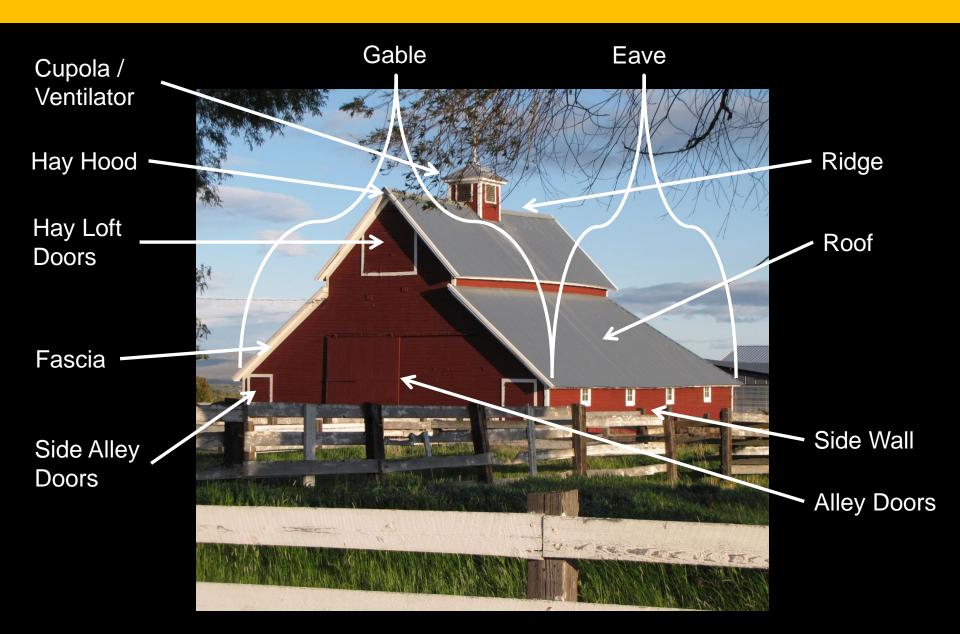
Michael Houser, Washington State Architectural Historian





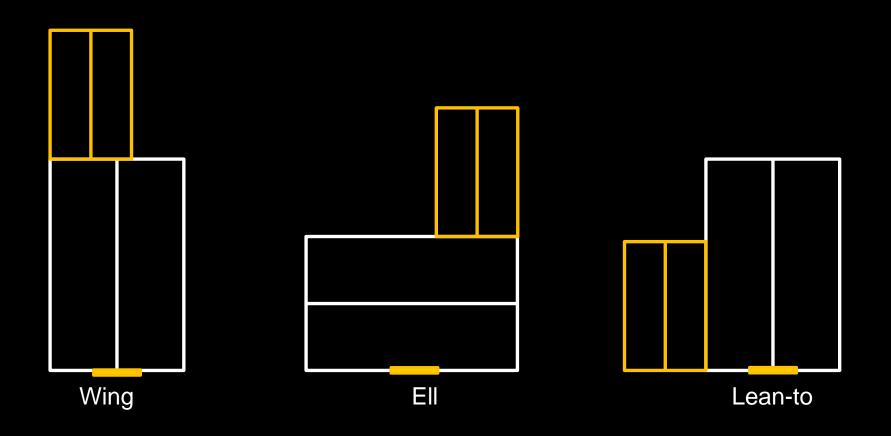
Aug - 2021

# Barn Elements



# Barn Elements

# Wing vs. Ell vs. Lean-to

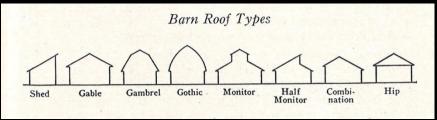


Barn Plan View

## Barn

# Forms and Types







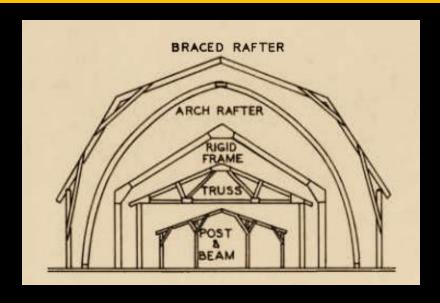


# Barn classification can be based on:

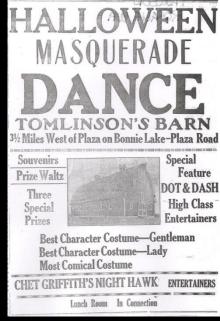
- Use/Purpose,
- Plan and shape,
- Framing system,
- Roof form

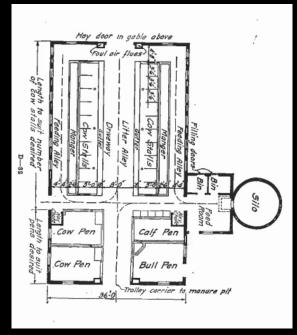


DAHP method









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



Shed, OR



Champoeg State Park, OR



Boyd, OR



Hillsboro, OR



Kitsap County, WA

## Gable (sometimes referred to as an English barn)



Adams County, WA



Adams, OR



Peirce County, WA



Lincoln County, WA

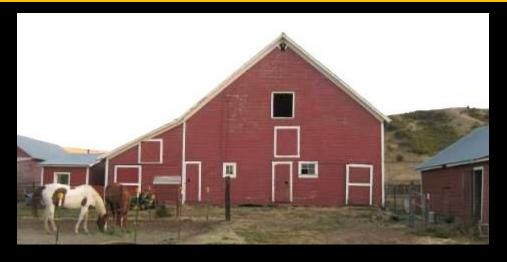


Skagit County, WA



Dayville, OR

## Salt Box (integrated lean-to)



Spokane County, WA





Brownsville, OR



Pierce County, WA

Wallowa Valley, OR

## Salt Box (integrated lean-to)



Benton County, OR





Finley National Wildlife Refuge, Benton County, OR



Waitsburg, WA

Poulsbo, WA

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





Stevens County, WA

Dufur, OR



Benton County, OR



Snohomish County, WA



LaPine, OR

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





Colfax, WA

Labanon, OR



Skagit County, WA



Victor Point, OR

## **Broken Gable / Gable with High Lean-tos**



Klamath Falls, OR



Walla Walla, WA



Mount Angel, OR



San Juan County, WA



Hayward, OR

## 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



Coupeville, WA



Snohomish, WA



Burnt Wood, OR

# Barn - Forms & Types Gable-on-Hip





Weston, OR

Walla Walla County, WA



Dufur, OR



Molalla, OR



San Juan County, WA

# Barn - Forms & Types English Gambrel



Thurston County, WA



Donald, OR



Ellensburg, WA





Lynden, WA

Enterprise, OR

# Barn - Forms & Types English Gambrel



Tangent, OR



Near Crater Lake, OR



Columbia County, WA



Lincoln County, WA

## Dutch Gambrel (note flare at eave line)



Fairfield, WA



Elgin, OR



Grays Harbor, WA



Willamette Valley, OR



Salem, OR

Scappose, OR

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



Woodburn, OR



Pendleton, OR



Pend Oreille County, WA



Troutdale, OR



Island County, WA

## **Gambrel w/Lean - To**



Pierce County, WA



Elgin, OR



Mount Vernon, WA



Yakima County, WA

Deer Park, WA

# Barn - Forms & Types Gambrel w/Lean - To



Eugene, OR



Snohomish County, WA



Scholls, OR



Sheridan, OR



Coupeville, WA



Moxee, WA



Condon, OR



Vancouver, WA

## Gothic (pointed arch roof truss)





Lacey, WA

Keizer, OR



Willamette Valley, OR



Vancouver, WA

Wilbur, WA

## Gothic (pointed arch roof truss)



Stayton, OR



Uniontown, WA



Colfax, WA



Weston, OR

### **Bow / Rainbow Truss**

(note completely arched trusses)







Pullman, WA

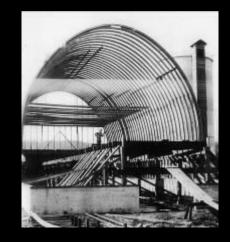
Ridgefield, WA



Satsop, WA



Sedro Wooley, WA



## Western Barn/ Monitor Barn / Basilican



Wasco, OR

Joseph, OR



Yakima County, WA



Pousbo, WA



Skagit County, WA

## Western Barn/ Monitor Barn / Basilican



Stanwood, WA



Joseph, OR



Linn County, OR



Thurston County, WA

## **Conical / Round / Centric Barns**





Lostine, OR

Sisters, OR





Medical Lake, WA



Diamond, OR St. Johns, WA

Joseph, OR

## **Centric / Round / Conical Barns**



Lakeview, OR



Grandview, WA



Hillsboro, OR



Blachly, OR



Pullman, WA



Lookingglass, OR

#### HOMEGUARD SUPER QUALITY BARN PAINT This brilliant red, high gloss, top grade paint will protect your property for years. It is economical because it weers so long. Barn paint must provide maximum protection at minimum cost. Made from the finest ingredients available . . . assures great covering power and extreme dynability. Each of its fine, belanced characteristics prove this to be, "a PAINT FINISHES bern paint of real quality." FOR EVERY SURFACE WESTERN GAMBLE STORES STORES LOS ANGELES





#### LIFE IS COLORFUL DOWN ON THE FARM

Red, for the barn and sheds, stands out in colorful contrast to the surrounding country. Natural shingle roof and White trim. Garage, Colonial Yellow.

Shades of green with white and gray make up this attractive scenel Verdi Green house with White trim. White barn has Silver Gray shingles and Dark Green trim. Garage and fence, White. For your White house consider Light Blue trim, a Venetian Red roof, for an attractive color scheme. French Gray sheds have Venetian Red roofs. Fence is White. Colers blend tagether nicely!

# Barn Paint

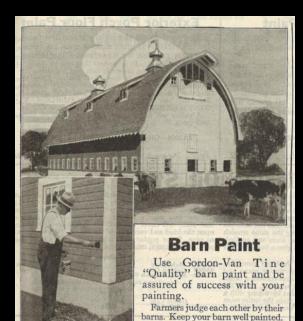








# Barn Paint



Everyone sees it and it's theone 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 silos. It will lengthen the life of shingles and metal roofing. It is a wood pre-

servative and will add years to the life of your building,
You may use this paint with perfect confidence, knowing that we will stand
back of every can or barrel. Only the best ingredients are used. It is ground
to an unusual 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 full coats. Measure for it by the "square foot" method. You will never regret having given it a trial. Colors (See Page 65), 4A2001—Light Gray. 4A2002—Venetian Red.

PRICES PER GALLON

25 and 50 Reds \$1.33 | 5 Gallon Reds \$1.42 | 1 Gallon Reds \$1.55 Gallon Barrels Gray 1.60 | Kits Gray 1.70 | Cans Gray 1.80

Gordon-Van Tine Co. Catalogue – c.1924

Jim Brown's Bargain Book –







Sears & Roebuck Paint – 1932

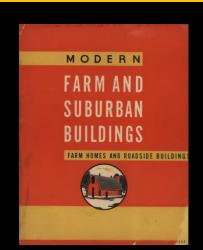




# Barn Plans

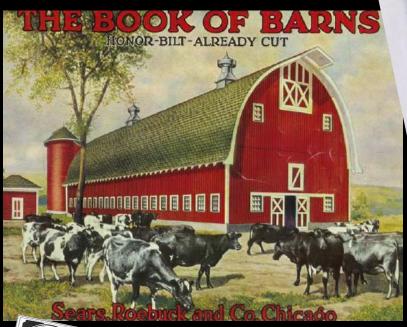
- Farmer
- Itinerant Builder
- Architect
- Plan Service
- Extension Office
- Lumber Yard
- Factory Pre /Ready-Cut







**Barn Plans Ready Cut** 



Sears & Roebuck - 1919

A Practical Farm Barn, Costing \$1160 Plans for this Barn, \$100 Practical Farm Barn

Fenner Manufacturing Company of THE WEST Fenner Barn No. 422 BARN No. 422, the standard size of which is 36x60, is a good sized barn for general use. The strong, gambrel roof adds many cubic feet of space to the already large loft, and makes an excellent outside appearance.

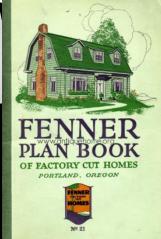
The Arizonava games places through the bown in the coupler. The Arizonava games places through the bown in the coupler. The driveway goes clear through the barn, in the center. To the left of the driveway goes clear through the barn, in the center. SPECIFICATIONS The driveway goes clear through the barn, in the center. To the left of this driveway are stalls and accommodations for live stock, while the space this driveway are stalls and accommodations for live stock, while the space to the right may be used for storing wagons and implements, or may be used for storing wagons and implements, or may be used for storing wagons and implements, a sile, which is the right may be used for the home in the right may be used for the large transfer and form. to the right may be used for storing wagons and implements, or may be use for grain and feed. The barn in the picture is equipped with a silo, which, Loft Jobbs, 2x18, 18" O. C.
Smiline, 3x18, 18" O. C.
Smiline, 3x18, 18" O. C.
Rafter, 2x1, 24" O. C.
Sheatling for root,
Reof, Extra & A \* red shingles. It is our policy to show in this catalog only those barns which are of a like our policy to show in this catalog only those barns which are of a like local and appropriate and appropriate the local area. accepted and standard design that they are recognized as the leaders of shorts Should the interior expansioners. Local changing to meet your re-Joors, stalls 2x12 plank, and loft 1x4 flooring.
Latering wills, 1x12 with butters, boors and minutes. accepted and standard design that they are recognized as the leaders enterior arrangement need changing to meet your rewards. On the leaders of the standard design that they are recognized as the leaders of which we have the standard design that they are recognized as the leaders of the lea course, we do not furnish. where. Should the interior arrangement need changing to meet your rements, we can change it, not only in this, but in any of our barns. Or, with a barn of any special design. It will now may be not only in the property of ments, we can change it, not only in this, but in any of our barns. Or, wish a barn of any special design, it will pay you to get our prices, it to your own station, all cut to fit and ready to put together easily and

> Fenner Manufacturing Co., Portland, OR - 1921

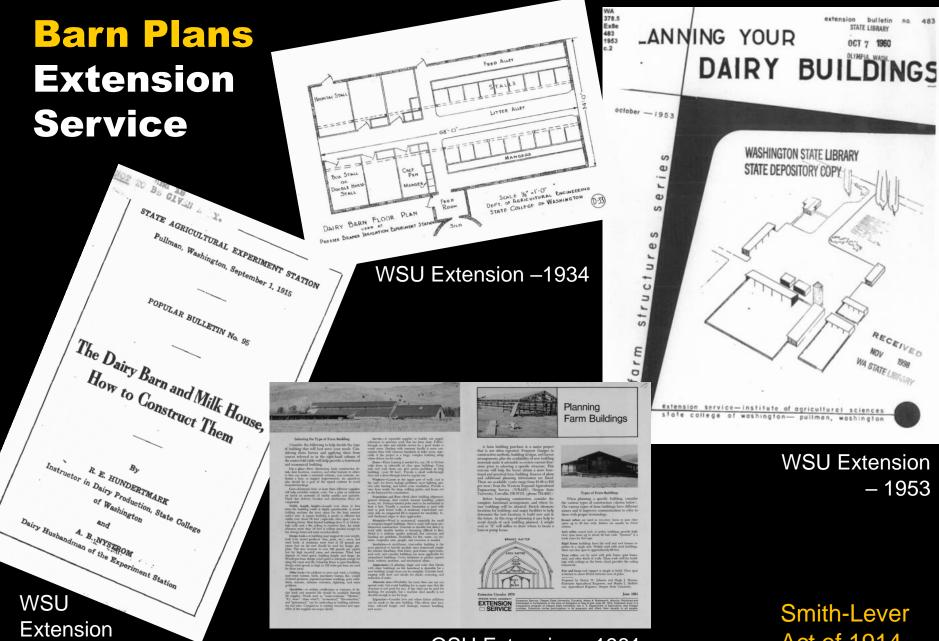


weit as the value or my
place,
place,
There are five stall, with a light, well ventilated passage-way in the row,
p, the stall is provided with fived bows, and three large fived bins are preleft in a convenient of the large and the tool room;
the first of the convenient of the large and is the large and is in the large and in the large and la

Couler girthern and sills, 6xg.
Ports, 6xg and 4x4.
Pirst Bour joists under stalls, 2xg.
18" O. C. PASSAGE STALLEY WAGONS STALL 13 5/11/21



Gordon Van Tine- 1915



OSU Extension –1981

-1915

Act of 1914

## **Barn Plans Lumber Yard / Plan Service**



Weyerhaeuser -1946

For Farm Buildings

"Materially Yours"

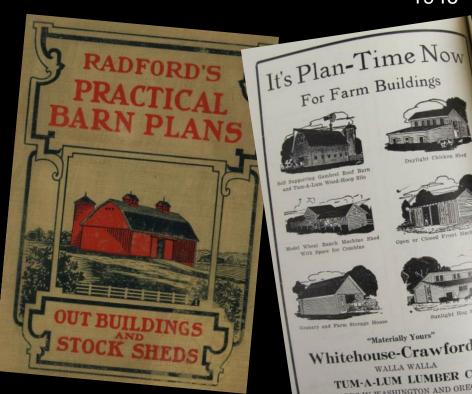
Whitehouse-Crawford Co.

TUM-A-LUM LUMBER CO. YARDS IN WASHINGTON AND OREGON

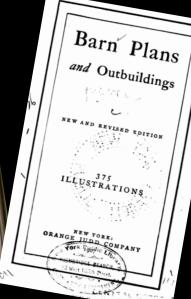
WEYERHAEUSER

The 204 designs in the Weyerhaeuser 4-Square Farm Building Service meet the exacting requirements for buildings of maximum use value, nominal cost and enduring service. They meet the needs of modern farming , which is under

Weyerhaeuser Sales Company



Radford's Practical Barns Plans – 1907

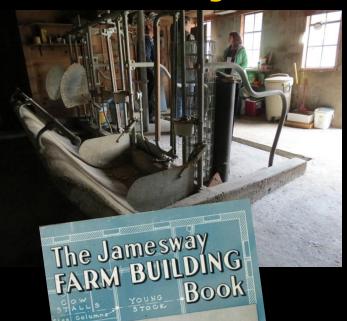




HOMERENEARM

1881

# Jamesway Co.











## Barn Roofing

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



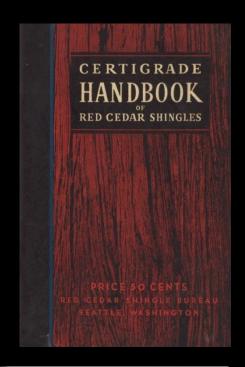




### **Roofing – Wood Shingle / Shake**





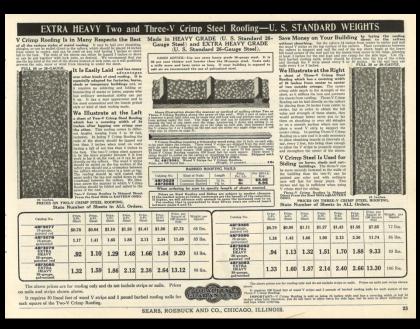




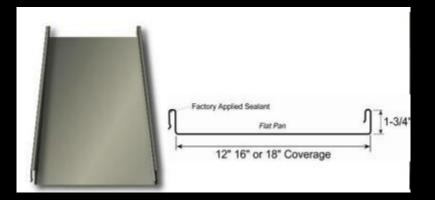


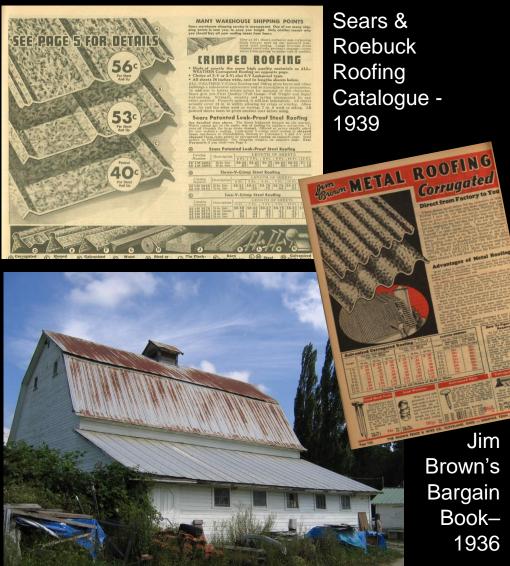


### **Roofing – Standing Seam**

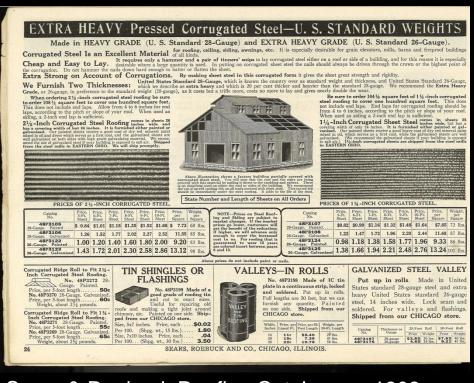


## Sears & Roebuck Roofing Catalogue - 1908

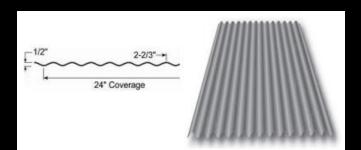




### **Roofing – Corrugated Metal**



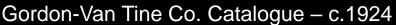
Sears & Roebuck Roofing Catalogue - 1908





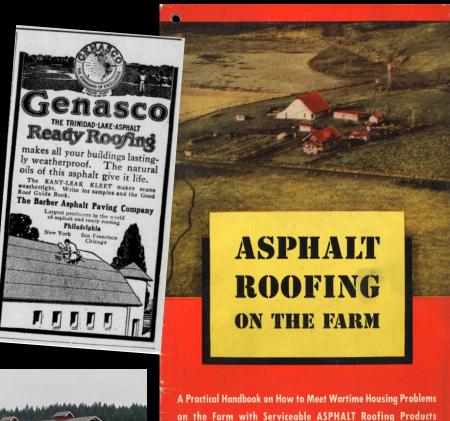
### **Roofing - Asphalt**











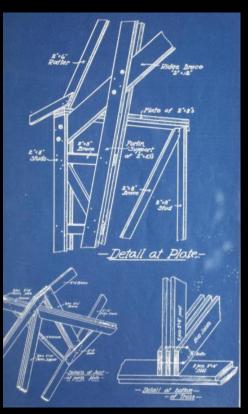
Asphalt Roofing on the Farm– c.1950

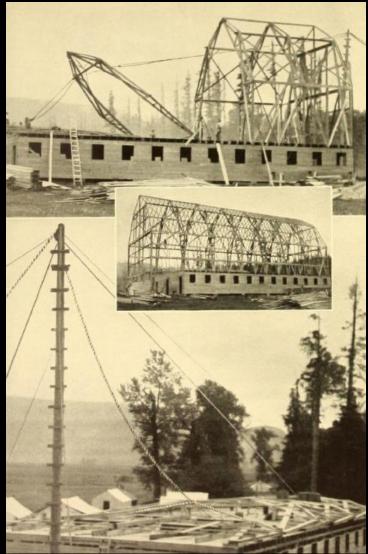
### Framing / Truss System

- Log
- Heavy Timber Frame
- Pole Construction
- Plank Truss Frame
  - Braced Truss
  - lowa Truss
  - Shawver Truss
- Concrete
- Clay Tile / Brick
- Plywood Rigid Frame

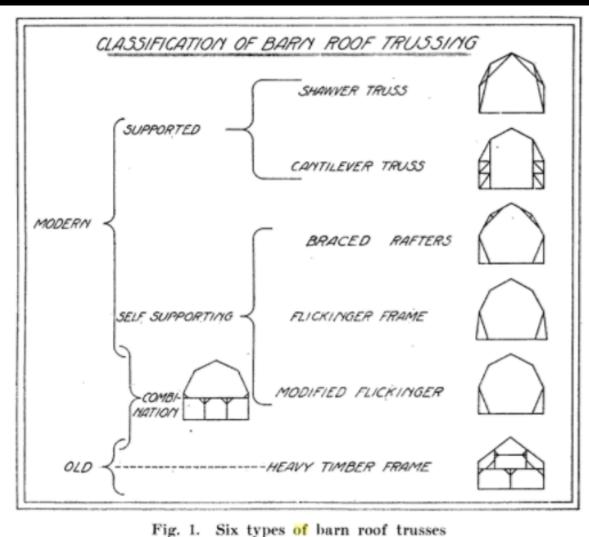








### Framing / Truss System





#### American Society of Agricultural Engineers

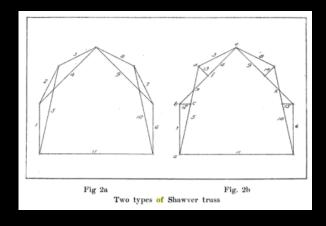


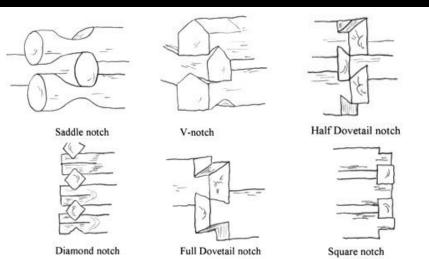
Fig. 1. Six types of barn roof trusses

## Barn – Framing/ Truss System Log Framing





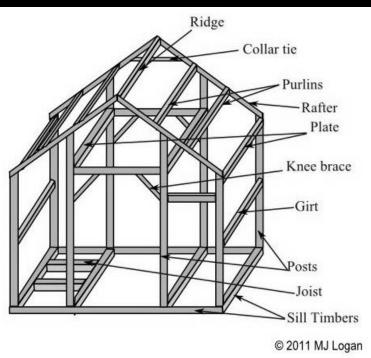






## Barn – Framing/ Truss System Heavy Timber - Framing

#### **Timber Framing Diagram**







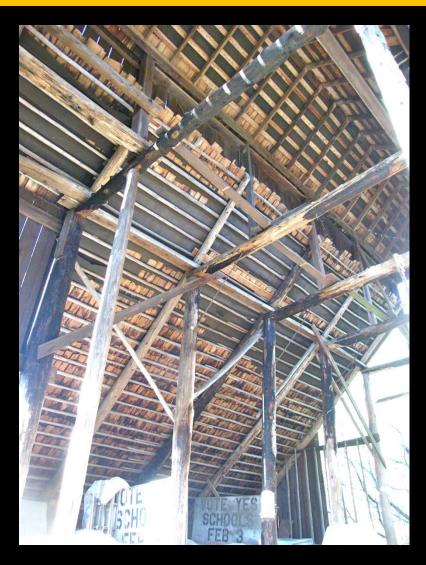






### Barn - Framing/ Truss System

### **Pole Construction - Framing**



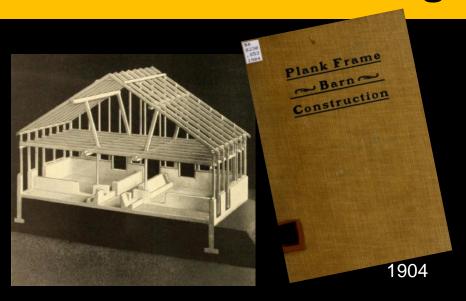








## Barn - Framing/ Truss System Plank Framing - Gable Framing









#### **Barn – Framing/ Truss System**

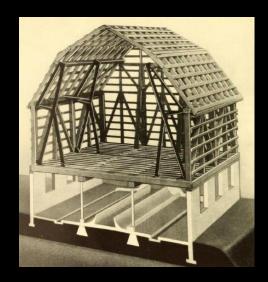
## **Plank Framing – Gambrel Framing**





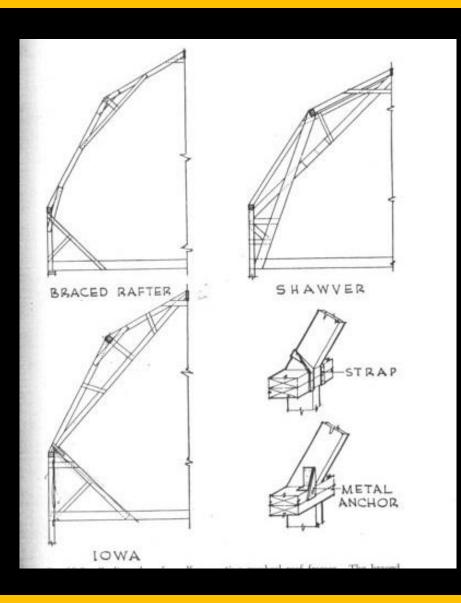








## Barn – Framing/ Truss System Plank Framing - Gambrel Framing

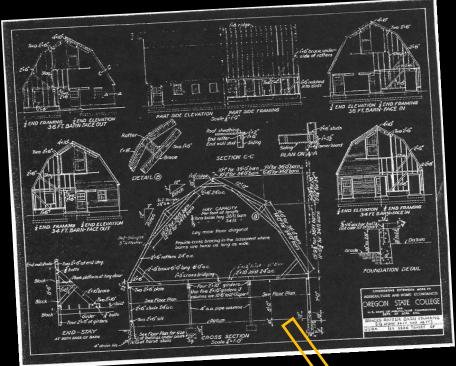






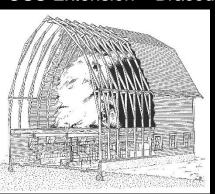
#### **Barn – Framing/ Truss System**

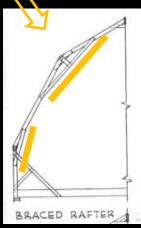
### **Braced Truss - Gambrel Framing**





#### OSU Extension – Braced Truss





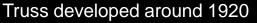


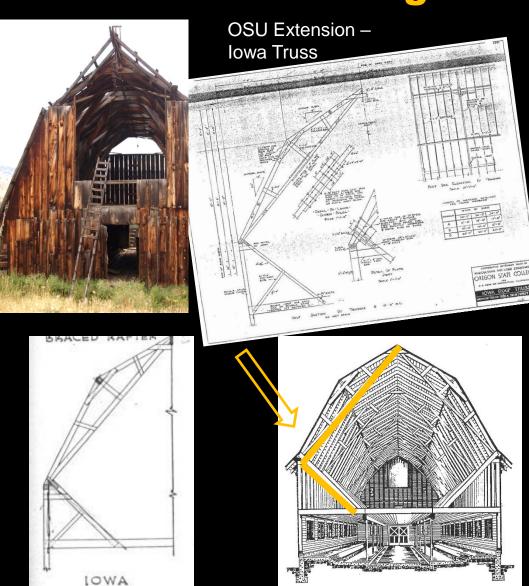


#### **Barn – Framing/ Truss System**

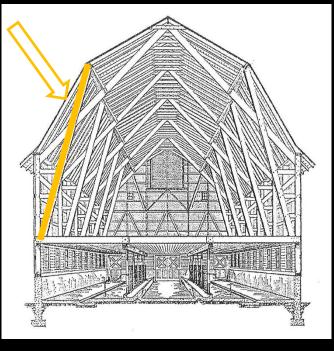
### **lowa / Clyde Truss - Gambrel Framing**





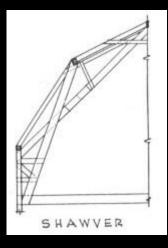


## Barn – Framing/ Truss System Shawver Truss - Gambrel Framing













Truss developed late 19th Century



## Barn Barn – Framing/ Truss System ??? Truss - Gambrel Framing

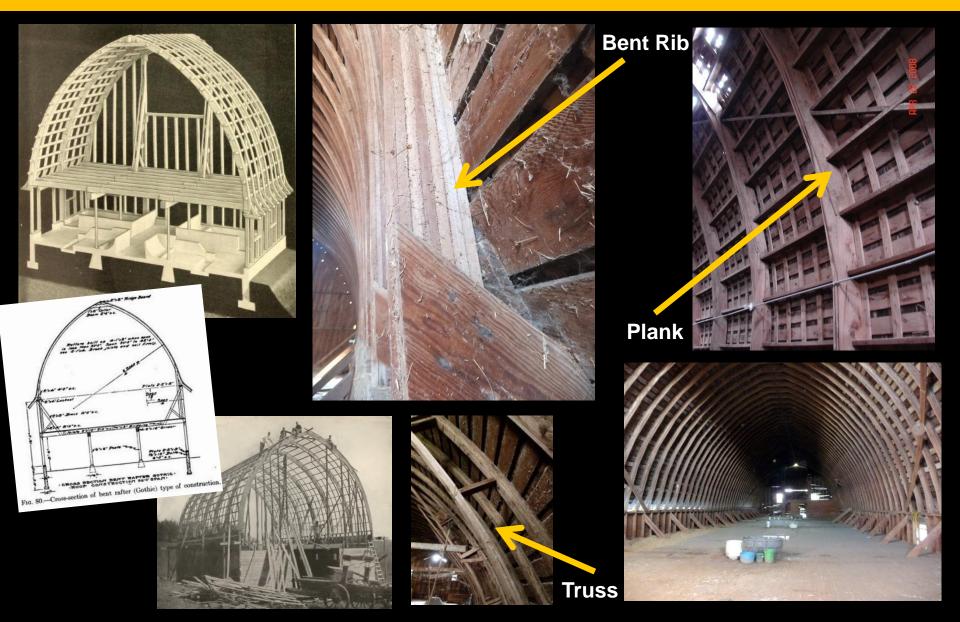
#### Other truss systems





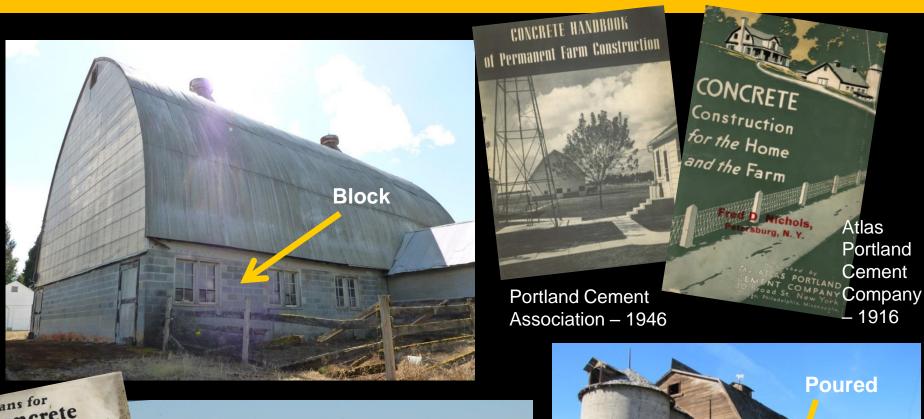


## Barn – Framing/ Truss System Plank Framing - Gothic Arch



#### **Barn – Framing/ Truss System**

#### - Concrete: Poured & Block

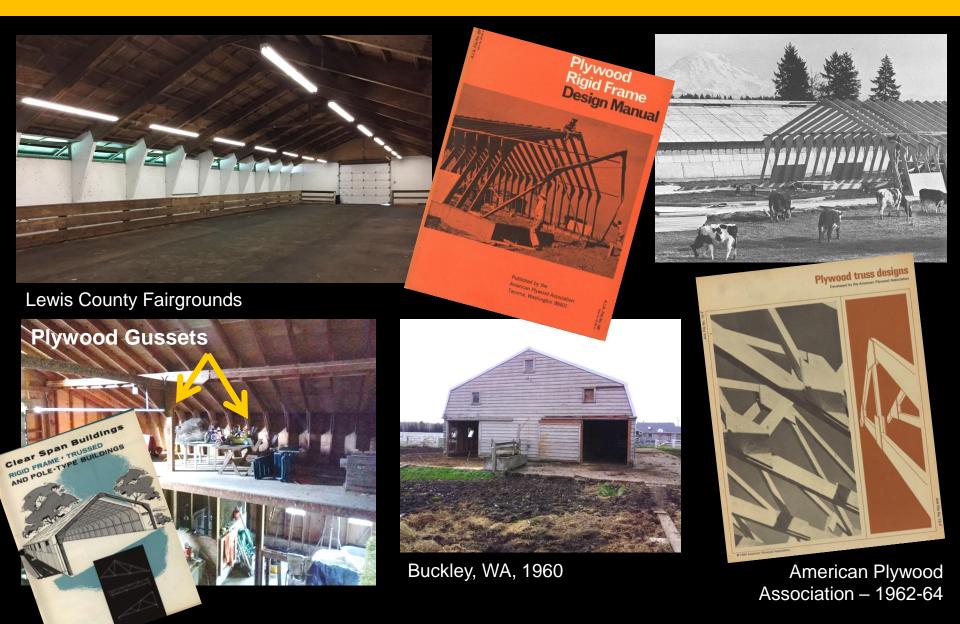






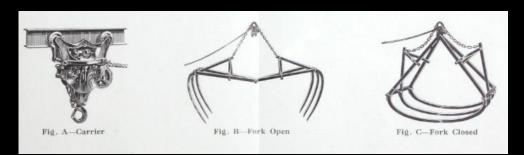
#### **Barn – Framing/ Truss System**

### Plywood Rigid Frame



#### **Barn - Details**

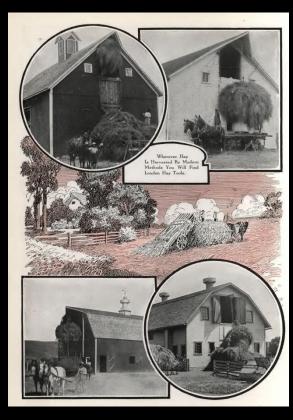
## **Hay Hoods**



#### Hay Fork













## Barn - Details Hay Hoods



Garfield County, WA



Benton County, OR



Linn County, OR



Klickitat County, WA



Graham, WA





#### **Barn - Details**

### **Cupolas & Ventilation**



A ventilating system must be planned individually for the building into which it is to go.

#### Barn Ventilation Burn Ventilation Expert

and not much was known about its real food and lifegiving value. It soon being a study of stock raising live stock and mankind. that these animals would be

IN THE days of straw sheds—the warm room has increased when stock was not prop- the product, for example, the erly housed, very little atten- flow of milk from the dairy tion was paid to pure air, cow; but this warm, tight building has also brought about a condition that breeds disease; and the disease is came apparent to those mak- proving to be a menace to

more productive when housed It has been proved that pure in warm buildings, and this air is two-thirds of a cow's is what has brought about the ration; in other words, for modern barn. It is true that 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 onehalf 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



Whitman Co. - The Smith Place – 1935



Pierce Co. - c1923

## Barn - Details Cupolas & Ventilators



Snohomish Co. - Grimm-Jensen Farm – 1932



Spokane Co. -Hyslop Farm – 1926



Adams Co. - Krause Barn – 1901



Pend Oreille Co. -LaPorte Barn – 1901

## Barn - Details **Equipment**



Cook Family Farm – 1927



Grimm-Jensen Farm – 1932



Shady Nook Farm – 1920



Schindler Farm- 1909



Smith Place – 1935



## **Barn - Details Decoration**



Heath Farm – c.1920



Ebby Road Farm – 1923



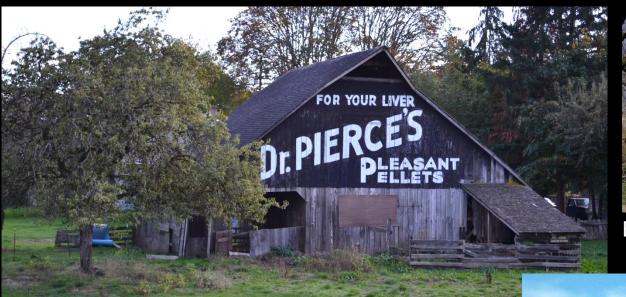
Bolick Farm – 1895





Brown Farm, Olympia- c. 1905

## Barn - Details **Decoration**



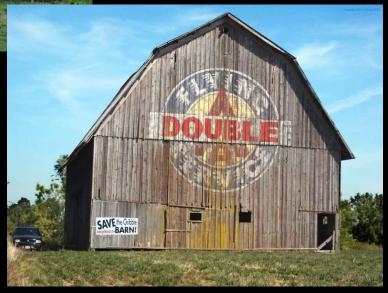


Barn, Oakland, OR

Cochran-Rice Farm, Cottage Grove, 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





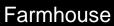
Homestead Cabin



Granary

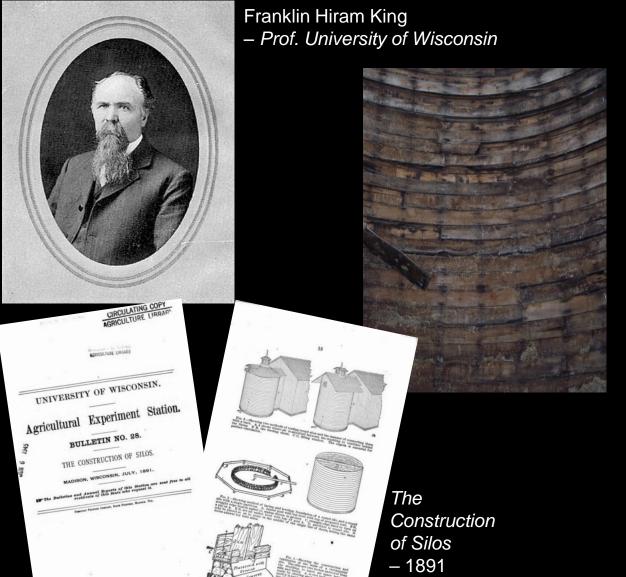


Root Cellar





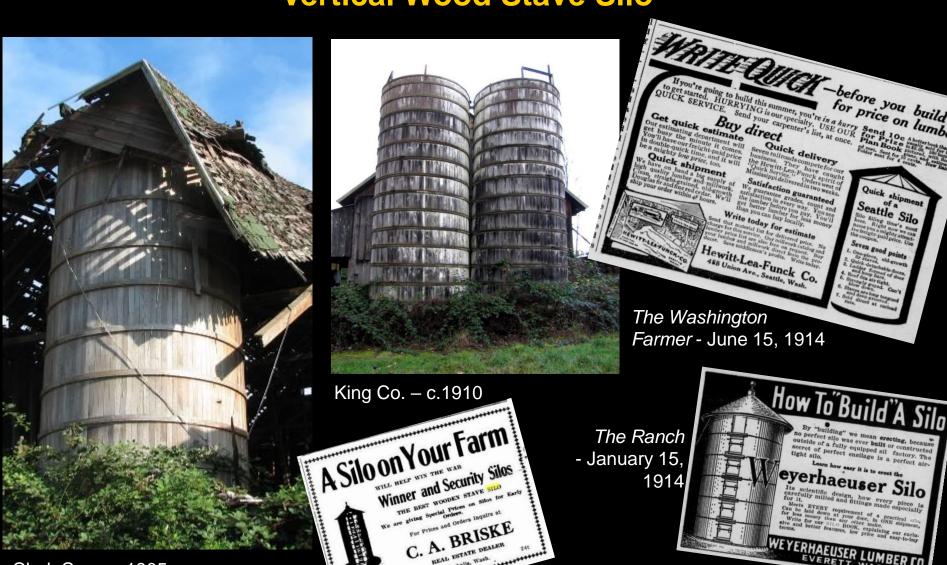
King Silo (Note horizontal boards)





Klickitat Co. - 1900

**Vertical Wood Stave Silo** 



Clark Co. - c. 1905

Chehalis Bee Nugget -January 25, 1918

Timber Crib - Tung-Lok Silo

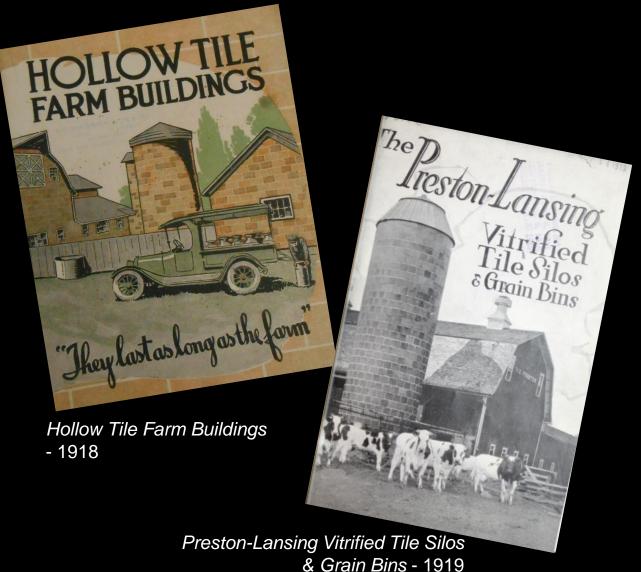


Asotin Co – c.1915



**Glazed Tile Silo** 





Clark Co. - 1920

### **Brick Silo**



Spokane Co. - 1919



Cowlitz Co. - c.1920



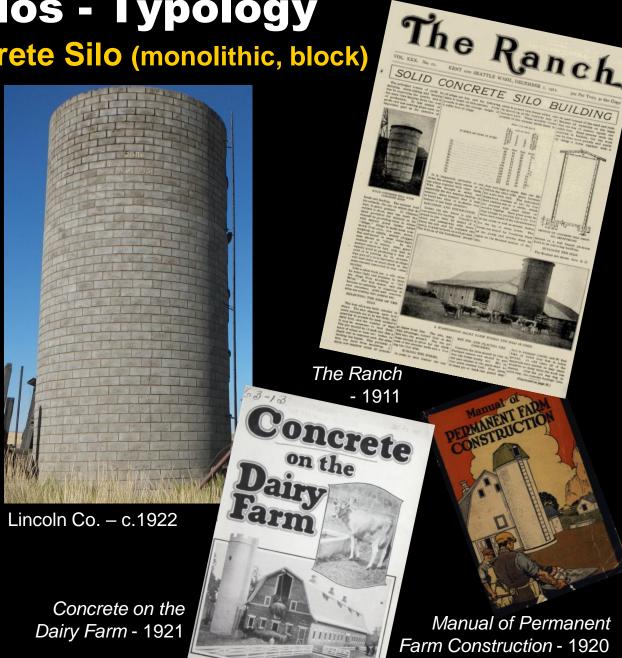


Farm Homes of Brick - 1925

Concrete Silo (monolithic, block)



Grays Harbor Co. - c.1935



PORTLAND CEMENT ASSO

**Concrete Silo** (Ribstone / Stave Silo)





Pierce Co. – c.1920

## Steel Paneled (Harvestore) Silo



Pierce Co. – c.1935



Adams County - c. 1948

Advertisement - 1930



#### **The Washington State**

# **Department of Archaeology & Historic Preservation**



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

