This circular has been prepared in answer to many requests for plans and recommendations for an expandable poultry laying house designed to house flocks of 500 to 1,000 birds.

The O.S.C. Commercial Laying House was designed for two 250-hen units. By using multiples of the 250-hen construction unit, flocks of various sizes up to 1,000 birds may be accommodated. If desired, partition walls may be eliminated in houses made up of two or more basic units to provide single pens that will accommodate 500 or more birds.

Laying houses of the same general type as the O.S.C. Commercial Laying House have been used by the State College and by many poultrymen throughout Oregon for the past 23 years.

Floors

Details for the construction of wood or concrete floors for this house are shown in this folder. Either type of floor is satisfactory. If floor heating is to be a part of the management program, much work will be saved if the type of floor heating to be used is decided upon before the floors are built.

To construct the alternate section with a concrete floor, first erect a 4-inch foundation wall (6 inches or 8 inches for concrete block or tile) on a concrete footing 8 inches wide and 4 inches thick around the outside building line. The bottom of the footing at the shallowest point should be 12 inches below the outside ground line (finish grade line). The foundation wall should extend 6 to 12 inches above the finish floor, depending upon the type of litter management to be used. The higher wall is needed to keep wood framing out of contact with deep litter: Make the minimum height of the foundation wall 8 inches above the outside finish grade line.
Place anchor bolts for a wood sill in the foundation wall at the time the concrete is poured. Bolts $\frac{1}{2}$ x 12 inches spaced 6 to 8 feet apart are satisfactory. To protect wood sills from possible moisture in the concrete, place one or more thicknesses of asphalt roofing the width of the sills over the top surface of the foundation wall before the sills are put in place and bolted down.

To prevent settling of the floor or foundation, remove tree roots, vegetation, and all top soil over the area to be occupied by a concrete floor. Try to keep the disturbance of sub-soil to a minimum. Sub-soil disturbed in the removal of roots and other organic objects should be packed down again.

After the foundation walls are in place spread gravel to a depth of about 4 to 5\(\frac{1}{2}\) inches over the area within the walls except under partitions, where gravel should be only 3 inches deep. This allows a thicker concrete floor beneath partitions. The gravel sub-base should be rammed or packed.

Place an asphalt-treated insulation board $\frac{1}{2}$ inch thick and approximately 4 inches wide around the inside of the foundation wall in a vertical position as an expansion joint and for insulation. A layer of asphalt water-proofing paper over the gravel is desirable. Pour approximately 3\(\frac{1}{2}\) inches of concrete over the paper and gravel fill. The insulation board acts as an expansion joint and a non-conductor of heat from the slab floor. To make hosing and cleaning the floor easier, slope the floor to the drains in the front and rear walls. A slope of about $\frac{1}{4}$ inch to the foot is enough.

Provide air vents as shown in the elevations, if you use a concrete or tile foundation wall around the outside edges (perimeter) of the building to support wood floor joists. All wood girders should be at least 12 inches above the ground.

Walls

Notice the framed openings in the upper part of the front wall. These can be closed by means of vertical sliding frames covered with glass substitute or muslin. When not in use, these frames may be lowered into a pocket in the wall to protect them from damage. Here is a convenient way to adjust the frames. Fasten a rope to the center of the top of each frame. Run the rope through a pulley near the ceiling. By manipulating the rope, the frames can be drawn into any position and held there.

On the rear windows you have a choice. They may be omitted to reduce the cost, or installed to make the house lighter and to permit better ventilation in hot summer weather. If the windows are installed, they should be of single strength B grade glass.

If dropping pits are used instead of dropping boards, the windows should be higher, as shown in the drawings.
Experience has shown that it is desirable to construct poultry houses with inside finish material on the walls and ceiling. Such houses are warmer in winter and cooler in summer than houses with only exterior finish and are also easier to clean. Note, however, that the house has been designed so that this feature may be initially omitted and then added at a later date if so desired.

**Ventilation**

Two 12-inch circular ventilating shafts with revolving hoods are needed for each 250-hen basic unit if forced ventilation is not provided. Gable louver-ventilators with inside-hinged doors should be placed in the wall ends to provide the necessary attic ventilation. These doors should be closed in freezing and near freezing weather and open the rest of the time.

**Roof**

Shingles, bituminous roofings (roll roofing), galvanized iron, and aluminum are all satisfactory roofing materials. (For discussion and specifications see Extension Bulletin 540, and U. S. Department of Agriculture Farmers' Bulletin 1751.)

**Nests and equipment**

Four tiers of open single-type nests are shown on the end wall. Such an arrangement reduces time spent in gathering eggs.

**Roosts**

Roosts shown in the plans are 2 x 3 inches with the 3-inch surface flat. Such an arrangement will be less likely to produce crooked keels on birds that are inherently weak in this respect or those that are not in proper mineral balance.

**Electric wiring**

Vapor-proof fixtures and conduit are required where the walls and ceilings are to be hosed down. Non-metallic sheathed cable may be used if care is taken when the house is cleaned and washed. For complete information on regulations for poultry house electric wiring, confer with a licensed electrician or the State Electrical Inspector, Bureau of Labor, Salem.

A master control switch should be provided in the feed room or some other convenient location for all the lights in a poultry house. Ordinarily lights are used on laying hens for either a few hours in the morning or a few hours in the evening. With either method the master switch is necessary.

Evening lights should be dimmed in some way in order to warn the hens to go to the roost before the lights are turned off completely. Many dimming devices are in use. In general, dimming is accomplished by placing special resistance in the lighting circuit.

Space lights as indicated in the drawings and use 60-watt lamps with reflectors. Reflectors should be adjusted to provide direct light on all birds.

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1See alternate cross section sheet No. 1 of construction drawings.

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