STRAW-LOFT POULTRY HOUSE
20 x 40 FEET — TWO UNITS — 100 BIRDS EACH

Low-Cost Insulation — Practical Ventilation

CIRCULAR 525
UNIVERSITY OF ILLINOIS • COLLEGE OF AGRICULTURE
EXTENSION SERVICE IN AGRICULTURE AND HOME ECONOMICS
ONE HALF FRONT ELEVATION

Roofing
Ridge Roll
Two-Unit Straw-Loft Poultry House

By D. G. Carter and H. H. Alp

Moderate and fairly uniform temperatures can usually be maintained more easily and economically in a straw-loft poultry house than in some of the other common types. This is because of the effective low-cost insulation afforded by the straw. Since losses in egg production often follow radical temperature changes, insulation is especially valuable in a climate as variable as that of Illinois.

Locating the house. A good location for a poultry house provides for (1) a well-drained soil, (2) free circulation of air around the building, (3) southern exposure for sunlight on the windows, (4) protection from prevailing winds in winter, (5) possibility for future expansion of house and yards, (6) separation from service buildings and barnyards, and (7) greatest convenience in daily care and management.

Convenience and sanitation are important considerations in the arrangement of poultry yards. A double-yarding system is recommended, so that half the range area may be in crops each year. This practice will aid materially in reducing losses in the flock from parasites and diseases.

Management of house. A house built according to the plans in this circular will provide adequate ventilation if only the recommended number of birds is kept in it. Gable ventilators should be kept open at all times except in severely cold weather, and even then they should not be entirely closed. The number of windows that it is advisable to keep open will depend upon weather conditions.

The 2 to 3 feet of loose straw needed in the loft may be left there indefinitely. There should be no trouble from lice or mites getting into the straw if sanitary conditions are maintained and sparrows and pigeons are kept out.

Size. This 20-by-40-foot house is designed for 200 birds. A center partition divides the house into two 100-bird units. At least 4 square feet of floor space is recommended for each bird; overcrowding usually results in dampness, disease, and fewer eggs.

Equipment. Two methods of roost construction and droppings disposal have proved satisfactory: roosts may be hinged to the wall over a droppings board above the floor (the method shown on this plan), or roosts may be built on a wood-frame wire-covered pit that

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rests on the floor. About 20 nests are needed for each 100 birds, or two sections of 20 nests each for the house.¹

**Water supply and drainage.** A freeze-proof hydrant and a floor drain are recommended for each 20-by-20-foot unit. A floor slope of ¼ inch to the foot toward the drain is adequate.

**Electric lights.** Four 40-watt lamps are needed for this house (1 watt of lamp capacity for every 5 square feet of floor space). For all-night lighting 10- to 15-watt lamps are recommended. These amounts of light will be effective in increasing winter egg production.

Lamps suspended 6 feet above the floor and 7 feet from the front wall of the house and provided with reflectors will give the best distribution of light on the floor. Lamp holders may be of porcelain or composition material. The lamps should be equipped with individual pull-chain switches and so connected that all will operate from a single switch. An appliance outlet in each unit is a desirable addition.

All wiring should be installed by experienced workmen and according to the requirements of the National Electric Code.

**Foundation and floor.** The foundation and floor measurements are indicated on the plan. Anchor bolts, ½" x 16", spaced at intervals of 6 to 8 feet, attach the sill to the foundation. Water supply and drain lines are placed before the floor is laid. A 4-inch fill will raise the floor above the surrounding ground and thus secure a dry floor.

Concrete of good quality for the foundation and floor is made in the proportion of 1 sack of cement, 2½ cubic feet of sand, and 3 cubic feet of gravel. Approximately 5½ gallons of water per sack of cement is recommended.

**Framework and covering.** The plans indicate conventional wood-frame construction, with 2" x 4" sill, wall studs, and plates, and 2" x 6" rafters and ceiling joists. The blueprint illustrates narrow eaves, narrow roof projection, and boxed cornice. Gutters and downspouts are especially recommended for the south side of the house. Framing members are spaced 24 inches apart on centers for horizontal siding. If vertical siding is used, the maximum stud spacing is 4 feet on centers, and 2" x 4" nailing girts are necessary midway between the sill and plate.

**Approximate Quantities of Material**

The quantities of materials required for this building will vary with changes in plan, substitution of materials, kind of roofing, quality of concrete, land slope, experience of the builder, and other factors. The cost

¹More complete details of construction, roosts, nests, droppings board, and pit are shown in blueprint plan No. 404-2. This plan and Circular 506, Poultry Equipment, may be secured by writing to the University of Illinois, College of Agriculture, Urbana.
depends upon the kinds and grades of material selected for the building; cost figures and exact material lists can best be made by a carpenter, contractor, or dealer in the community.

The following list of the principal materials required will serve as a guide to planning and purchasing.

Masonry

Approximately 13 cubic yards of concrete are required.

Foundation: 35 sacks cement, 3 cu. yds. sand, 4 cu. yds. gravel
Floor: 47 sacks cement, 4 cu. yds. sand, 5 1/4 cu. yds. gravel

Metal

Reinforcement: 240 lin. ft. 1/2" steel rods (or equivalent)
Anchors: 1 1/2 doz. 1/2" x 16" bolts
Ridge roll: 42 lin. ft.
Netting in loft: 700 sq. ft. 2" poultry wire
Nails: About 125 lbs., various sizes

Framing

About 1,800 board feet of framing will be required, consisting of the following items calculated with some allowance for extras.

Plates and sills: 420 lin. ft. 2" x 4"............280 bd. ft.
Studding: 44 pcs. 2" x 4" x 12".............352 bd. ft.
Joists: 12 pcs. 2" x 6" x 20'.................240 bd. ft.
Rafters: 42 pcs. 2" x 6" x 14'...............588 bd. ft.
Rafter ties: 5 pcs. 1" x 6" x 16'.............40 bd. ft.
Ridge: 42 lin. ft. 2" x 6"..................... 42 bd. ft.
Joist supports: 10 pcs. 1" x 4" x 10'.........34 bd. ft.
Loft floor strips: 52 pcs. 1" x 4" x 10'.........172 bd. ft.

Covering

There are several choices of materials for each of the following items.

Roofing: 11 squares
Roof sheathing: 1,274 bd. ft. matched boards, if laid solid. For wood shingles 728 bd. ft. roof boards are needed; for metal roofing, 400 bd. ft. of 2" x 4" at a 2-foot spacing is used for purlin deck
Siding: 840 bd. ft. matched drop siding or similar material
Interior sheathing: 330 bd. ft. matched boards

Miscellaneous

The following equipment and materials required to complete the house should be itemized by the builder or dealer:

- 3 doors (2' 6" or 4' 0")
- 2 ventilating louvers
- 4 cellar sash windows
- 4 single-sash end windows
- 8 double-sash front windows
- Outside trim boards
- 40 nests

Droppings board and frame
160 lin. ft. perches
Floor drains and tile
Electric wiring
Water lines
4 gal. paint
Gutters and downspouts