



BRITISH
COLUMBIA

Ministry of Agriculture, Food and Fisheries

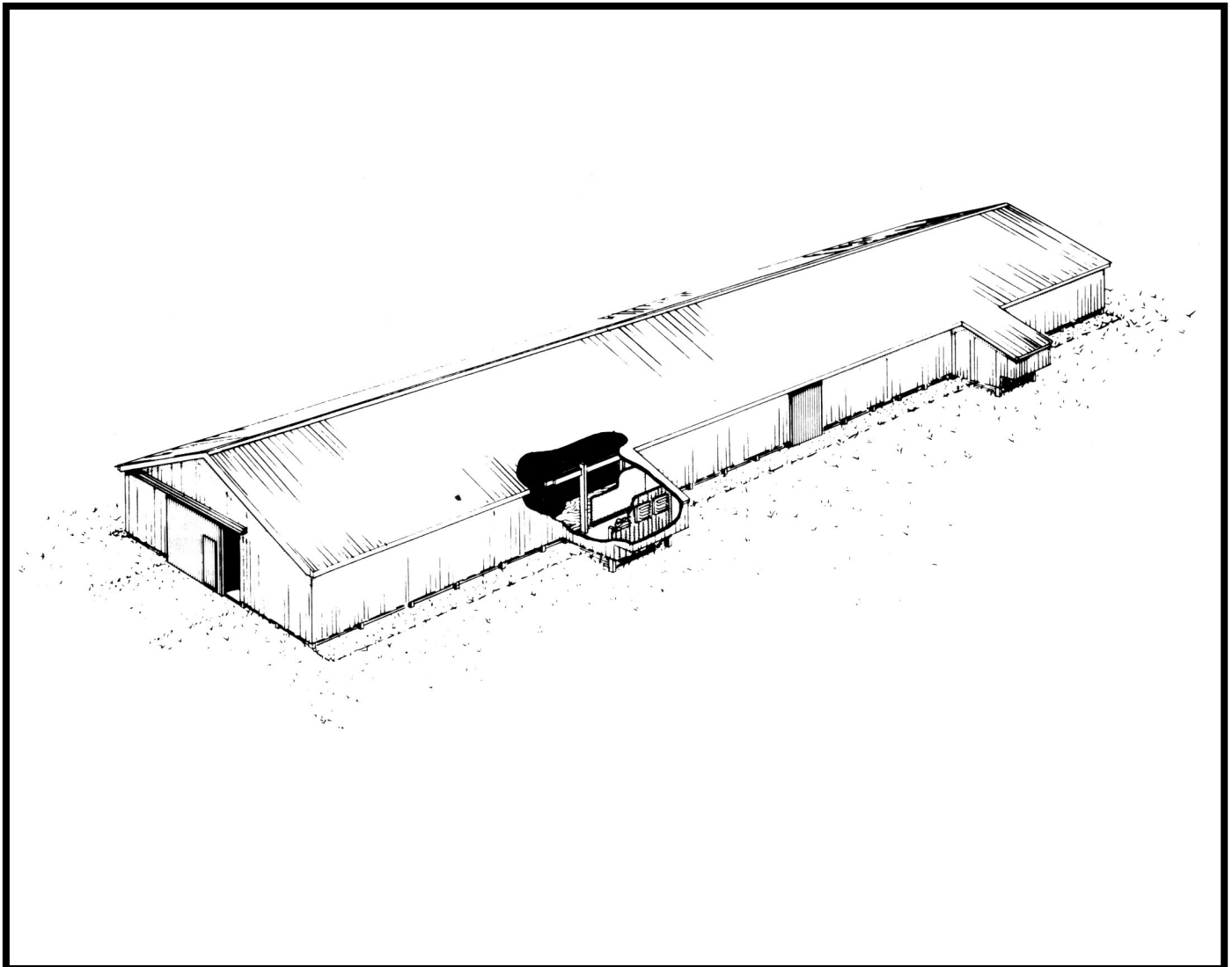
Agricultural Building Systems Handbook



PLAN

342-02

GENERAL PURPOSE SINGLE STOREY POULTRY HOUSE - POST CONSTRUCTION



DEVELOPED BY CANADA PLAN SERVICE

GENERAL PURPOSE SINGLE STORY POULTRY HOUSE

CPS

PLAN 5101 NEW 2:75

This plan gives details of construction for a fully-insulated controlled-environment poultry building suitable for brooding and rearing turkeys, chicken broilers, roasters or replacement pullets. With the addition of slatted dropping pits in the center part of the floor area it can also serve as a litter-type house for heavy-breed chicken layers.

STRUCTURAL FEATURES

The basic design is a 40 x 200 ft. building with ceiling about 9 ft high. Large sliding end doors are for litter cleaning with tractor and loader. Walls can be made either post frame or stud frame.

With stud-frame wall construction, polystyrene foam perimeter insulation is built into the continuous concrete foundation by tacking the insulation board to the concrete forms with finishing nails before pouring; the fresh concrete bonds securely to the insulation, and the finishing nails pull easily through the insulation when the forms are stripped. The exterior metal siding is applied horizontally; this is unusual but it makes a stiffer wall and eliminates the extra strapping required for vertical metal siding. Other suitable exterior claddings such as stained plywood or aspen flakeboard could be substituted.

Post frame wall construction uses pressure-treated wood posts spaced at 8 ft instead of the continuous concrete foundation. A labour-saving idea here is to bore the post holes, then pour concrete footings in the holes to a level line exactly 4 ft below the concrete floor elevation. This way the top ends of the posts can be uniformly pre-notched for the plate beam before erecting. Post frame construction gives quicker construction and better windstorm protection than stud walls.

With either type of wall a 40-ft. clear-span truss system supports the ceiling and roof, eliminating the need for troublesome interior posts.

Lateral stability to resist windstorms is provided by special nailing of the ceiling interior cladding, together with a secure connection from the ceiling diaphragm to the endwall and foundation. Two methods are given for partly prefabricating the ceiling diaphragm. Either plywood or galvanized steel may be used; the galvanized steel ceiling requires fewer nails since the joints can be lapped, not butted as with plywood. Both methods eliminate the need for the troublesome knee braces formerly used to brace the ceiling to the side walls.

VENTILATION

Ventilation is provided by cable-adjusted slot inlets along the top of both long walls, and by two banks of exhaust fans. Each fan bank is wind-protected by a weather hood built under an extension of the roof. Discharging several fans under the same weather hood helps prevent the stopped fans from freezing in cold weather.

For turkeys and other poultry requiring lighting control, an optional exhaust fan house with light-stopping baffles can be added. The addition of a vertical baffle under the eaves and black paint sprayed into the eave spaces can effectively stop light from entering the air inlets as well.

Ventilation fan capacities can be based on the following table. The 'Step 1' rate should operate continuously. The 'Step 3' rate is for warm weather temperature control and should, if possible, be controlled in 2 or 3 temperatures stages.

	STEP 1	STEP 2	STEP 3	TOTAL
Laying hens				
Litter - high density (1.25 ft ² /hen or less)	0.5	0.5	4.0	5.0 cfm/bird
- low density	0.5	0.5	3.0	4.0 cfm/bird
Breeder hens				
Litter or mesh floor	0.5	0.5	5.0	6.0 cfm/bird
Broilers				
Litter - high density (1 ft ² /bird or less)	0-0.5	0.5-1	4.0	5.0 cfm/bird
Turkeys				
Multi-purpose building	0.125	0.125	1.0	1.25 cfm/pound
Turkey barns	0.5	0.5	4.0	5.0 fm/ft ² (min.)

HEATING

Heating for poultry brooding must be capable of maintaining up to 90°F at the floor level. To minimize risk of fire, use either electric water heating or a fuel-fired central heating plant isolated from the brooder building with at least a ³/₄-hour fire separation. Heat may be transferred by circulating the heated water through black pipe radiators under hovers or through piping embedded in the concrete floor slab. No details of heating or lighting are included in this plan.

This plan conforms to the requirements of the *Canadian Farm Building Code 1975*.