



Factors Involved in Site Selection for New and Modified Poultry Facilities

Joe Berry

Extension Poultry Specialist

Oklahoma Cooperative Extension Fact Sheets
are also available on our website at:
<http://osufacts.okstate.edu>

As the importance of poultry production increases in Oklahoma and as larger buildings are being used to house birds, a number of factors must be considered before building a new building or modifying an existing one. If environmental and production concerns are to be addressed, proper site planning is a must.

Availability of utilities is high on the list of factors to consider during site selection. Is electricity available or can it be made available at a reasonable cost? Is water available either from wells or a rural or municipal water system, or both? Some companies require two water sources to insure a constant water supply. For well water, is the underground supply adequate for all times of the year and is the water quality desirable for a poultry house? In some areas of the country high mineral content of groundwater makes it undesirable for animal use. Is natural gas available in the area? The availability of natural gas is not a must, but it can certainly be less expensive than other sources of fuel.

Another important factor in site selection is roads. Are existing roads available to provide access to the site? If not, can existing roads be upgraded or new roads built at a reasonable cost? All-weather roads are a must to allow feed trucks, chick delivery trucks, and live haul trucks access to all buildings during any time of the year. On-farm roads should be properly crowned and ditched to insure usability in all types of weather. Although access is important, visitors should not be allowed on to the poultry farm without proper precautions. If precautions are not taken diseases can easily spread from one farm to another.

Topography is also an important factor to consider. It is very important for the building site to avoid low-lying areas with flooding potential. The site must have adequate drainage to easily control storm water. This is particularly important if several buildings are being considered because of the large amount of roof area from which runoff must be controlled. Storm water can not be allowed to stand near buildings because there is danger of flooding the broiler houses during an extremely large rain. The area around buildings may need to be graded after construction is complete and again on an as needed basis to prevent water from standing or running toward the houses. Storm water should also not be allowed to flow rapidly away from buildings in unplanned ditches because of the potential danger of erosion and damage to

building foundations and footings. Perhaps the best way to control roof water is to use gutters or grass covered ditches to carry water where it should go during run-off periods. It is also very important that storm water not become contaminated with litter that may have been spilled during the clean out of a poultry house. Careful removal of any spilled litter around the poultry houses should help avoid this problem. In addition to drainage considerations, topographic concerns should include elevation differences which could hinder the natural ventilation. It is not usually desirable to build a poultry house on the hillside opposite prevailing winds. In Oklahoma the prevailing wind direction is from the south, so building a chicken house on the north side of a large hill would not be recommended.

The prevailing wind direction is also important from another standpoint. In order to maximize benefit from natural ventilation the poultry houses should be oriented with the long side exposed to the wind. In Oklahoma that means the house should be oriented east-west. This directional orientation has another benefit, it minimizes the amount of sunlight which enters the house in the summer months. In contrast, during the winter months when the sun is lower on the horizon, sunlight through the windows can help warm the house. Information about specific prevailing wind directions can be obtained from the National Weather Service. In some locations topography dictates the direction of the house, but if choices exist the east-west orientation is suggested.

Existing buildings are an important consideration in site selection. Does location of the existing buildings allow space for future expansion of the new or modified building being considered? Planning for the future is always wise when building plans are on the drawing board. Another question to be considered is how will the natural ventilation be influenced by existing structures? Allowing a good distance on the downwind side of existing structures is always a good idea. The residence, if one exists on the site, is also a very important consideration. It is always suggested that poultry houses be constructed on the downwind side of the residence and at a distance such that odors, feathers, and noise from trucks are not a problem. There are times when constructing a poultry house upwind from existing houses and buildings is the best choice. When upwind site selection is necessary the appropriate distance may vary with different locations but a suggested

distance is at least 1/4 mile upwind from existing residences on the farm and 1/2 mile from public buildings (i.e., schools, churches), residences off the farm, and commercial fruit or vegetable farms. The downwind distance from other buildings may need to be determined by the wind shed. Wind shed is a term applied to the pattern of the wind on the downwind side of an existing building. The distance between buildings should be such that air flow is very close to returning to normal after passing the existing building. (Fig. 1) The National Weather Service can provide information on wind shed.

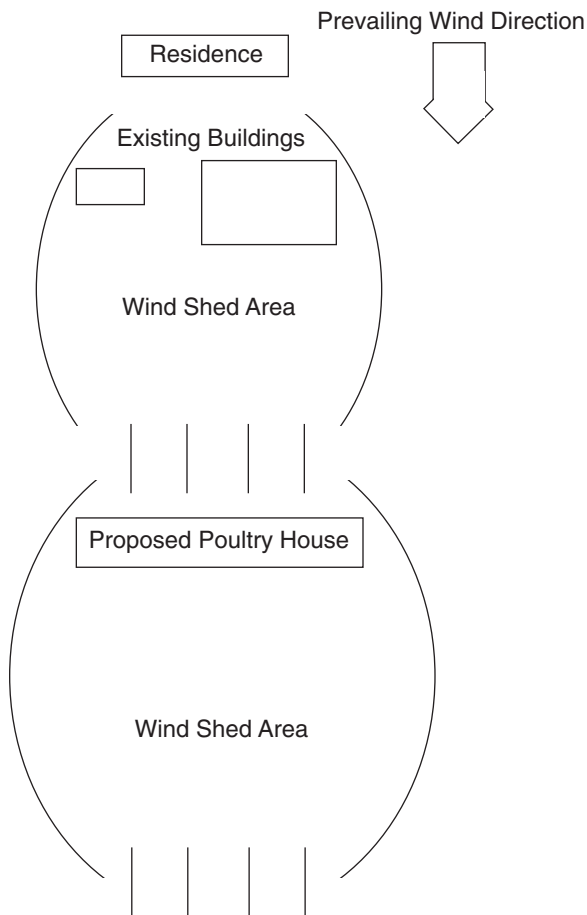


Figure 1.

The location of neighbors' homes must be taken into consideration as well. Neighbors that are best friends can become worst enemies if their needs and wishes are not taken into consideration when building or modifying a poultry house. If the first choice for a building site is unsatisfactory as far as the neighbors are concerned it is strongly recommended an alternate site be chosen. The neighbors' house and its location in relationship to the crop land area where litter will be spread at clean out time should also not be overlooked as an important consideration. Even though house cleaning may only occur on an annual basis it may significantly impact neighbor relationships. When considering building sites close to property lines, growers should remember that there is no guarantee the adjoining property will always be used for agricultural purposes.

In some cases it may be desirable to shield a poultry house from public view. Sometimes just seeing a poultry house encourages placing blame in the event of problems with odors, flies, etc. If sites meet all other criteria, then a site behind trees or just over the rim of a hill may be the most desirable. The old saying "out of sight - out of mind" should apply here.

Existing zoning laws must be followed when considering any type of building program. Building permits, which include waste disposal plans, must be obtained in advance of construction. Even if zoning laws do not require approval of a waste disposal plan it is advisable to develop a plan for use when construction is complete. Land application is the best use for poultry house litter. The suggested application rate is based on the annual fertilizer need of the crop being grown. Therefore if sufficient land is not available for proper disposal of litter an alternate site should be selected. Proper disposal of dead birds should also be a consideration when considering a building site. Former practices such as disposal-pit burials are not recommended and in some areas not permitted. A composter may be a good alternative, but they too must be included in site considerations for many of the same reasons already discussed.

When new buildings or changes in existing buildings are being considered a comparison of sites based on the factors discussed should be made. The site which best satisfies all factors being considered would likely be the best choice.

Oklahoma State University, in compliance with Title VI and VII of the Civil Rights Act of 1964, Executive Order 11246 as amended, Title IX of the Education Amendments of 1972, Americans with Disabilities Act of 1990, and other federal laws and regulations, does not discriminate on the basis of race, color, national origin, gender, age, religion, disability, or status as a veteran in any of its policies, practices, or procedures. This includes but is not limited to admissions, employment, financial aid, and educational services.

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Robert E. Whitson, Director of Cooperative Extension Service, Oklahoma State University, Stillwater, Oklahoma. This publication is printed and issued by Oklahoma State University as authorized by the Vice President, Dean, and Director of the Division of Agricultural Sciences and Natural Resources and has been prepared and distributed at a cost of 20 cents per copy. 0197 JSQ