

Farm Structures FACTSHEET

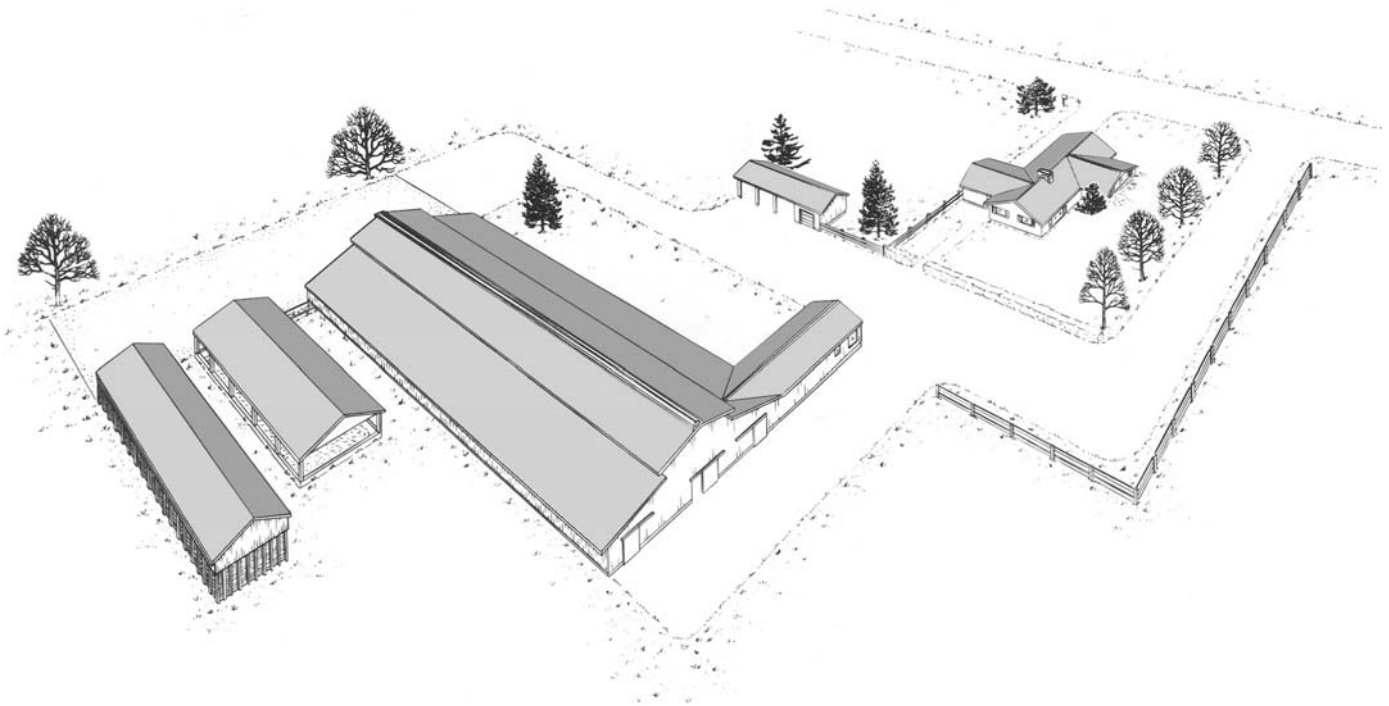


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PLAN FARM BUILDINGS AS A SYSTEM



INTRODUCTION

Mechanized confinement type livestock housing facilities have played a major role in a farmer's ability to increase the size of his unit and to become more efficient.

Livestock housing units are more than inert structures designed merely to shelter animals or store farm crops. In the true sense of the term they are "food production structures". Structures are in many cases designed to provide a completely controlled environment; controlled in terms of light, air temperature, humidity, drafts and sanitation. A building shell will no longer do. To meet these requirements, structures must be well built, properly heated, insulated and ventilated.

SOUND PLANNING

Rapid expansion and the trend to mechanized, confinement rearing of livestock involves large Investments of capital. For example, developing housing and feeding facilities for a 100 cow herd and young stock represents expenditures in excess of \$100,000. This can be one of the largest single expenditures that a producer will ever make in his lifetime.

To protect this investment and ensure dollar value is obtained, sound long range planning is essential. This is perhaps more true with buildings than in other phases of the farming operation. As field equipment wears out or becomes obsolete, it can be readily exchanged. Cropping procedures can be altered. Buildings and their automated equipment are more permanent and difficult to change.

OLD BUILDINGS

Farmyards have tended to grow like topsy-turvey. Over the last 60 years, using the dairy industry as an example, there has been three basic types of buildings constructed. Each was designed to do a specific job during a particular period in time.

We first saw the large, square type building designed for ground level storage of loose hay. Cow stanchions were located around the outside on two or three sides. Then in the 1940's, came the popular hip roof barn 34 to 36 feet wide, designed to accommodate two rows of stanchions and storage of loose hay overhead. In the early 1960's, the advent of the free stall revolutionized dairy housing and we have never looked back since.

Each time there was a change in technology, a problem arose with the old building. What should be done with it? How could it be used? We have found that the use of existing buildings is one of the most difficult and delicate problems to overcome in the initial phases of any building expansion.

In dealing with the problem, one must appreciate that many old buildings do have useful years left. It is the manner in which they are used that is important. In many cases, if the structure is sound, it can be converted to feeding areas, replacement stock housing or equipment storage. On the other hand, if it becomes an obstacle to proper yard arrangement, it should be torn down. It seems there is always a feeling that the old building is good for something, sometimes it is FIREWOOD. Time and time again, a small milk house worth maybe \$1,000 will completely influence a whole expansion layout. The value placed on old buildings is often not as great as the inconvenience they cause.

PIECEMEAL PLANNING

Too much emphasis has been placed on parts and pieces. What kind of a loafing barn? What kind of a silo? What kind of a mechanical feeder? Often we see a building put up just to fill an immediate need with little regard as to how it will be integrated with other components of the farmyard. Many times we are asked out to farms just to advise on the location of a silo or a milking parlour. This is virtually impossible to do until the whole overall plan has been worked out.

Piecemeal type expansion can actually create a false value. One may think a lean-to or a new milking parlour on the side of a 60-year old barn is fine, but when he tries to sell, the potential buyer may feel the building is inflexible and not suited for expansion. New material and labour worth so many dollars probably was spent but unless they produce something that looks good, is efficient and flexible, true value may not be there.

PLAN SERVICE

The Resource Management Branch of the BC Ministry of Agriculture and Food provides a farm building planning service to BC farmers and ranchers. The service is provided in two forms.

One form of assistance consists of a consulting service to those individuals intending to remodel or build new livestock housing facilities. To obtain this service, the farmer should contact his local district agriculturist to discuss the overall expansion program. At this time, he is asked to complete a data sheet and rough drawing of his existing farm buildings. Once this information is provided, a staff member from the Resource Management Branch will call at the farm to start the actual yard and building planning work. A preliminary layout plan is usually drawn up and then discussed with the farmer. Changes and improvements are noted and the plan is further developed.

WORKING DRAWINGS

The other form of assistance consists of making available up-to-date working drawings on a wide range of farm structures and accessory equipment intended to keep the progressive farmer abreast of advance methods of housing livestock.

The series includes plans on housing facilities and equipment for beef, dairy, fruit and vegetables, poultry, sheep, special structures and swine.

Leaflets in catalogue form are used to illustrate and provide a detailed description of the working plans. These catalogues are located in all Ministry of Agriculture and Food offices throughout the province.

Blueprint type working drawings are stocked in the Agricultural Engineering office located in, Abbotsford.

100-COW HERD

One of the new plans in the dairy series that is gaining in popularity with larger producers is Plan No. 321-20 “Free Stall Dairy System – Drive Through Feed Bunk, 100 Cows and Replacements”. (Figure 1) This is a detailed plan set for a free stall dairy barn to house, feed and milk a herd of 100 cows. Basically the plan consists of a 92' x 132' semi-clear span building with two rows of free stalls on either side of a center drive through feed alley. Use of this system of housing enables the herd to be divided into 50 cow groups according to size and production. Important features of this building are the feeding and manure systems.

FLEXIBLE SYSTEM

The feeding system consists of a drive-through type feed alley. This allows all types of feed (green chop, silage, hay cubes and concentrates) to be delivered to the cows with a self-unloading power box in amounts desired. A feed-saving tombstone feeding fence separates the cow passage from the feed alley. A further advantage is the elimination of expensive, often troublesome feeding conveyors. Feed storages can also be located away from the main housing structure providing more flexibility in site selection.

MANURE HANDLING

A tractor-mounted scraper is used to scrape manure from cow alleys into a centrally located mechanical cross conveyor or gravity flow slurry channel. The cross conveyor or channel transfers manure from the building and delivers it to a below ground rectangular storage or small reception pit. A pump, conveyor or elevator lifts manure from the reception pit to an above ground storage where below-ground construction is not possible.

The manure storage structure consists of a concrete floor, reinforced concrete side walls and a frame type roof to eliminate snow and rainwater. A bulkhead is provided at the side or end to allow use of a tractor and front-end loader for field spreading. A tractor scrape-out unloading ramp can be installed for rapid spreader loading.

Main advantages of handling manure in this manner are minimum equipment investment and trouble-free operation. Also, as water is not added, storage space requirements are reduced, making longer storage periods more economical.

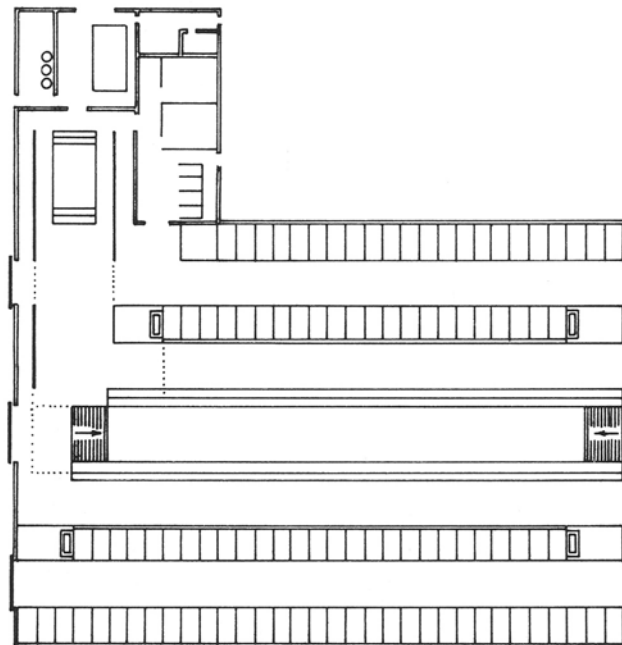


Figure 1

Dairy housing facilities for 100 milking cows and replacement stock.

FOR FURTHER INFORMATION CONTACT

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