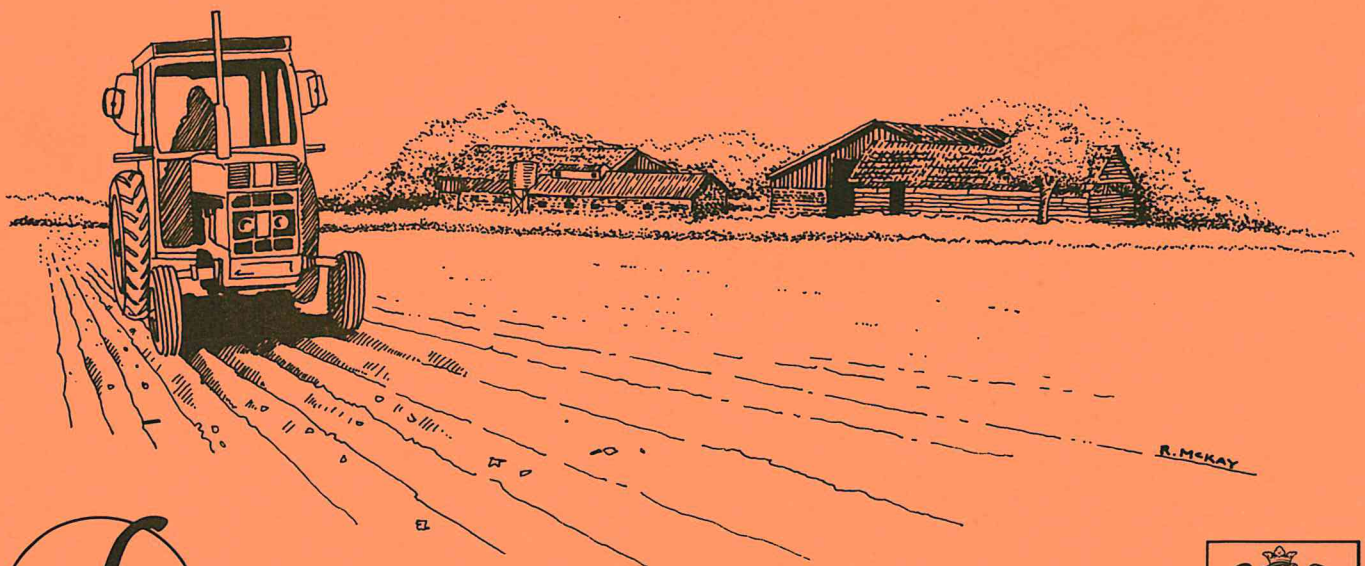


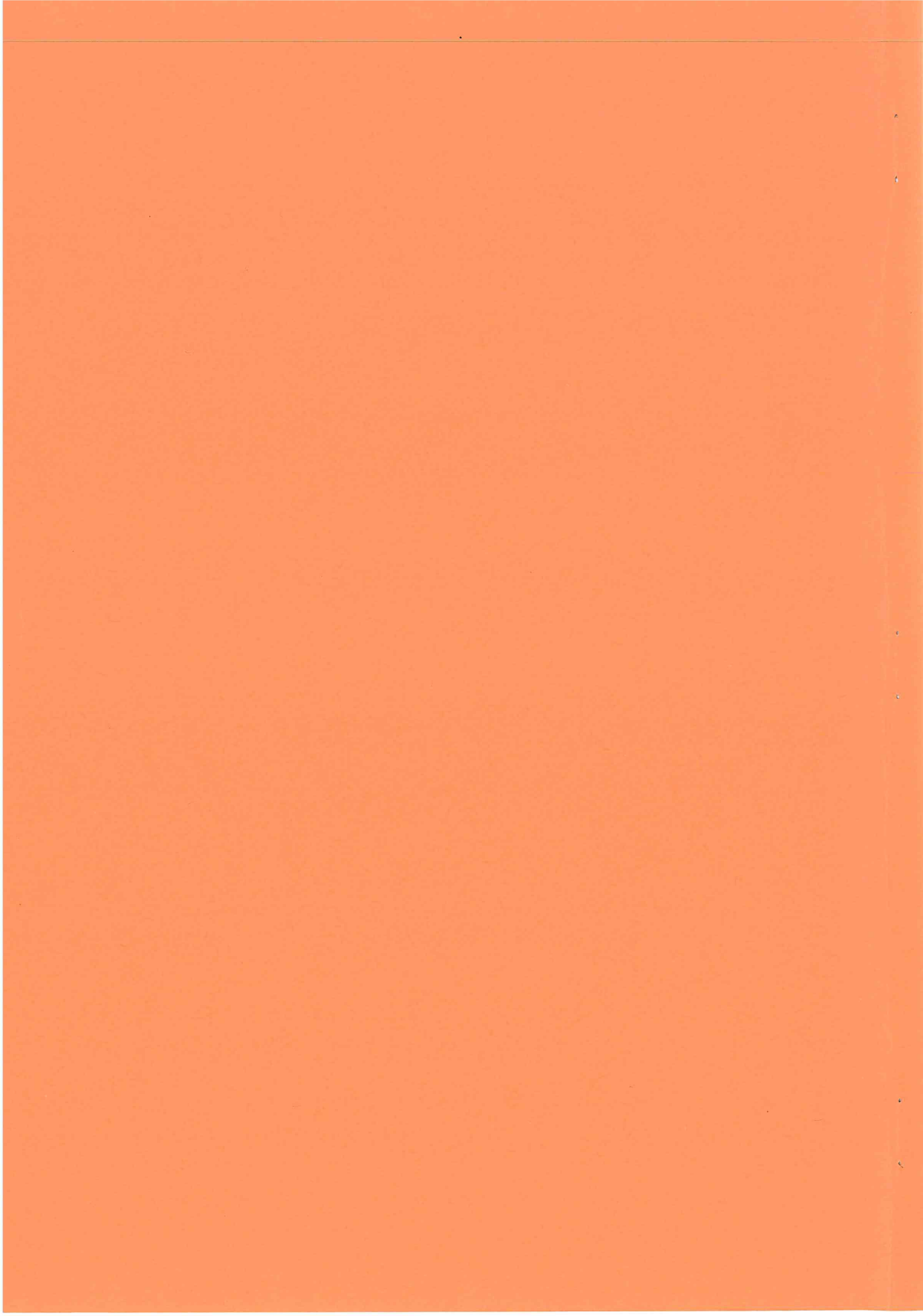
Farm Buildings DESIGN GUIDE



The National Farmers' Union,
Bedfordshire and
Huntingdonshire
County Branch.

The Planning Division,
North Bedfordshire
Borough Council.





F A R M B U I L D I N G S
D E S I G N G U I D E

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FOREWORD

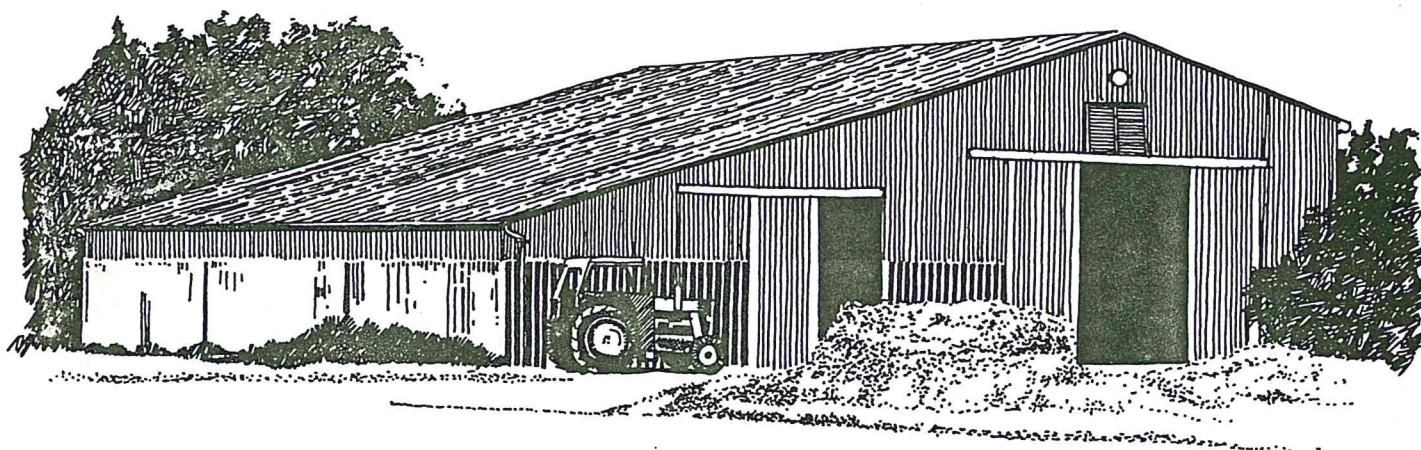
The Agricultural and Horticultural Industry have had some criticism in the last few years over their freedom which enables the farmer and grower to erect "Farm Buildings" without planning consent subject to erection constraints. We believe that whilst much of this criticism is unfounded, it could be equally avoided if a little more thought and care went into the planning, design and siting of new farm buildings.

In conjunction with the North Bedfordshire Borough Council we commend this Farm Building Design Guide to you.

Much of the content will, we hope, avoid conflict between the farmer and the public and is basically sound advice. May I on behalf of the farming industry seek your active co-operation in following the Guide whenever you erect a building in the countryside.

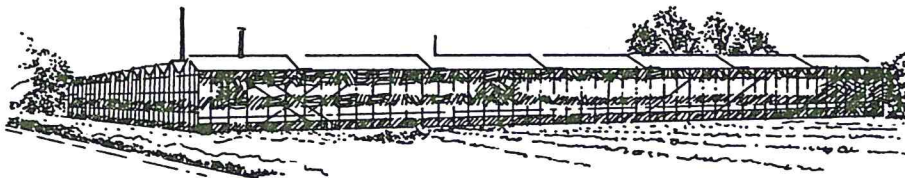


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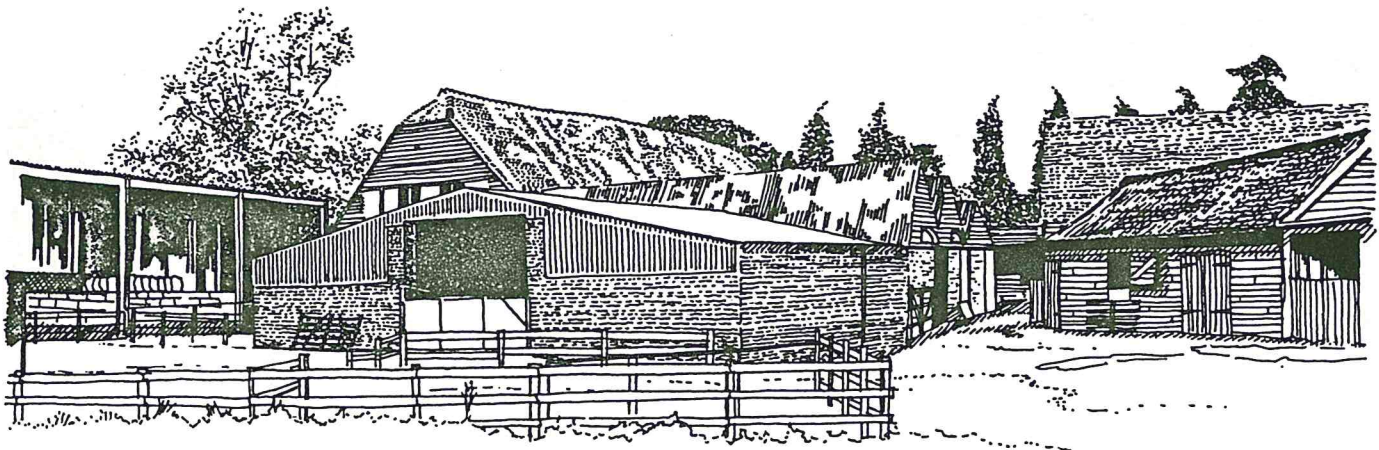
1. INTRODUCTION

- 1.1 In March 1977, the Borough Council published a booklet entitled 'Farm Buildings - A Guide to Design'. This was made available to prospective applicants for planning permission, and was distributed amongst the farmers in North Bedfordshire by the county office of the National Farmers Union. Since then, several changes have taken place in both planning and building control legislation, and the Government has stated its intention to further review the General Development Order as this relates to agricultural buildings. As this is likely to take some time to resolve, the Borough Council has decided to publish this 'interim' version of the Design Guide which will be updated, as and when appropriate.
- 1.2 The guide is aimed at anyone who is involved in the erection and use of new farm buildings. It sets out the many factors which should be taken into account before a project is commenced ie. user requirements, siting, design, landscaping etc, all of which contribute to a well designed building.
- 1.3 Modern farming methods necessitate the use of mass-produced, large span buildings of much greater scale than was used in the past. Consequently their impact on the landscape can be more pronounced. In North Bedfordshire, the landscape is relatively flat and large farm structures can be seen for some distance. This part of the County is predominantly arable in character and farm buildings reflect this. However in the east, horticulture is important creating large areas 'under glass', or more commonly today 'under polythene'.



Glasshouses are a common sight in the east of the Borough.

- 1.4 In the case of any new farm buildings, the importance of preliminary discussion with a planning officer, cannot be too highly stressed. This can save time as problems are solved before ideas have hardened and finance committed. For further advice, please ring Bedford 67422, and ask for the Planning Division



2. PLANNING THE NEW BUILDING

2.1 Planning the new farm building is very important. As well as financial considerations, there are several factors which must be taken into account. These are:

- a) **FUNCTION** - Function is a vital factor and will influence the scale, and type of building to be used. It may be a specialist, or general purpose building.
- b) **CONVERSION OR NEW BUILD** - History has left a legacy of traditional farm buildings which were not designed with modern agricultural practices in mind. Many of these still survive and with careful thought can be brought back to life. In North Bedfordshire many farmyards lie in the heart of conservation areas, and the buildings may be listed as being of Architectural, Historic or Local interest. Consequently, whenever possible, traditional barns and farm buildings should be retained. The comparative costs of conversion and new build should be considered along with the implications for management, siting, and the need to find new uses for old buildings.



Old barns can be converted, eg Village Hall, residential use.



- c) **ADAPTABILITY** - Consideration should be given to the adaptability of the chosen building. Can it be extended easily, and could it be adapted for other uses which may be required at a later date?
- d) **LONG TERM PLANNING** - The agricultural requirements of the building should be considered as part of a long term plan for the farm. Is the building to be the first of several phases and how should all the new buildings relate to each other?

3. THE SITING OF THE NEW FARM BUILDING

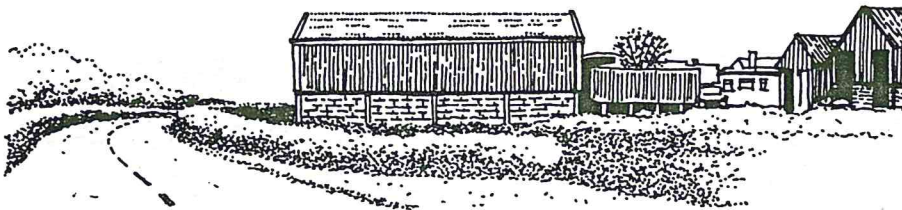
3.1 The position of a new farm building is usually dependent on its function and the space available. There are other factors, however, which take into account the visual importance of the building, both within the landscape, and the farm complex itself.

3.2 THE LANDSCAPE CONTEXT

- a) **VIEWPOINTS** - A modern farm building by nature of its scale and materials can act as a prominent feature in the landscape. It is important therefore, that views into, and out of the site are accounted for. In examining viewpoints, a decision must be taken as to whether or not the building should blend into the landscape, or if it should make a positive contribution to its surroundings. Grain Silos can create particular problems due to their height and reflective materials.



Views into a site are important. These silos could have been more sympathetically sited.



This is badly sited in relation to the road.

- b) **SKYLINE** - A building on the skyline will dominate the landscape as it introduces hard straight lines where these are not normally found. Re-siting below the skyline can prevent this visual intrusion.
- c) **NATURAL FEATURES** - Consider what natural features exist in the area and if these could be used to screen the new building. These include trees, changes in topography, embankments etc.



Skyline broken.

Skyline retained.



- d) **GROUPING** - When seen from a distance it is not the detailing of a building which is apparent but its scale in relation to adjoining buildings. Because of this, new buildings should form part of a group rather than stand in isolation. This can also be beneficial from the security point of view.



Grouping is better than ...

dispersal.

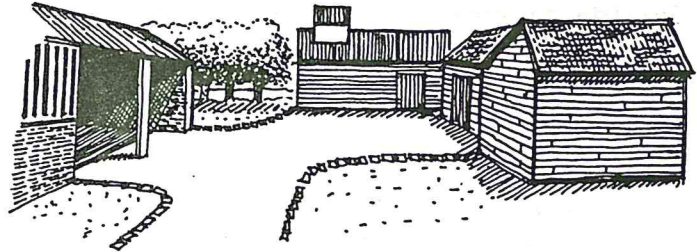
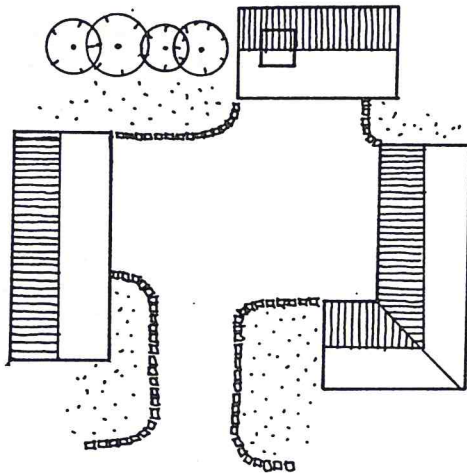


3.3 SITING WITHIN THE FARM COMPLEX

- a) **SLOPE** - A flat site has the advantage of requiring little in the way of 'cut and fill'. However, sloping sites have several advantages:
- *Setting a building into a slope can reduce its impact on the landscape.
 - *The slope can provide shelter and a warm aspect.
 - *Sloping sites may be less productive agricultural land.
 - *Spoil from excavation can be used in earth moulding for landscaping.
 - *Slope can result in 'stepped' buildings which can produce interesting roof patterns.
- b) **SHELTER** - This can be an important consideration as lack of shelter can have important implications for livestock and working conditions. Consider the site in relation to prevailing winds.
- c) **SUN AND SHADE** - Different farm buildings will require varying degrees of sun and shade. e.g. low temperature stores require shade.
- d) **TREES** - Trees can play a vital role in reducing the visual impact of a building. They can provide a good 'backdrop' thereby softening the effect of a large expanse of roof material. Furthermore, their vertical emphasis provide a contrast to the horizontal emphasis of modern farm buildings.
- e) **ACCESS AND DRAINAGE** - Both of these factors must be accounted for eg. availability of mains drainage, suitability for soakaways, manoeuvring

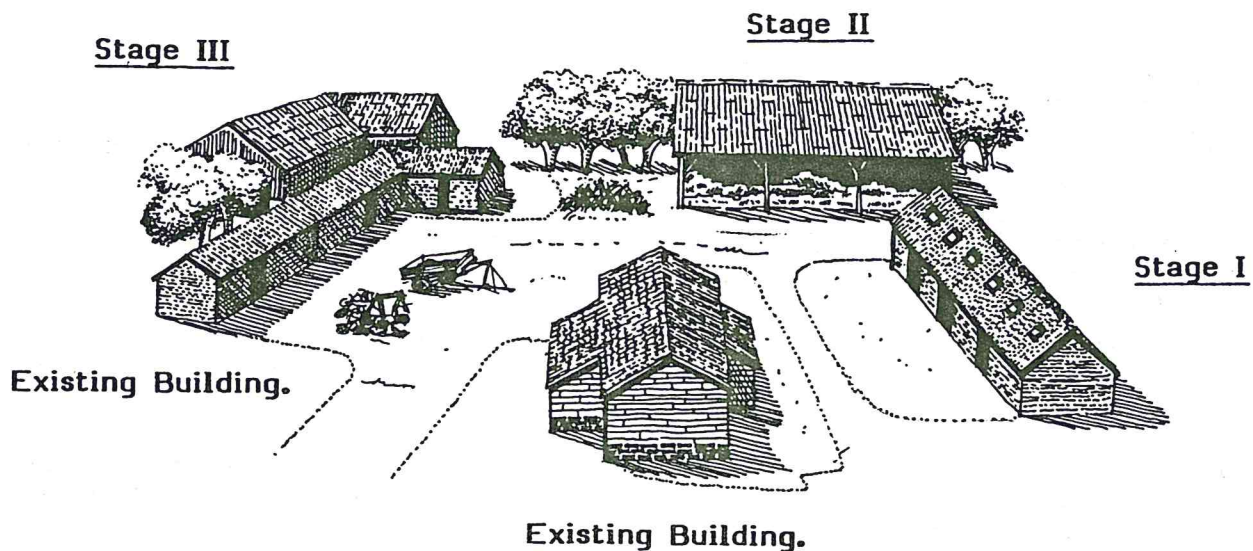
requirements of machinery etc.

- f) **OTHER FARM BUILDINGS** - If a new building is to be positioned adjacent to existing buildings, it should appear as part of a group, rather than an individual structure. Careful positioning can result in enclosure of space which contributes to a more pleasant environment.



Careful siting encloses external spaces.

- g) **LONG TERM SITING** - Where possible the decision to erect a new farm building should be taken in the context of a long term plan. In this example the development could have taken place as set out below:



Stage I - This was built in relation to the existing buildings and with the other stages in mind.

Stage II - This creates enclosure and access between Stages I and II.

Stage III - This completes the grouping and creates enclosure of the new space created.

Long term planning can therefore create enclosure, achieve co-ordinated buildings and aids greater efficiency. Haphazard and fragmented development should be avoided.

- h) **POLLUTION** - Consideration should be given to potential disturbance caused by smell or noise pollution, to adjoining or nearby residential properties. This can be particularly the case with intensive livestock units and grain driers. In the latter case, the local planning authority will normally require some form of attenuator to be fixed to the fan housing. Each case will be considered on its own merits.

4. THE DESIGN OF FARM BUILDINGS

- 4.1 This section outlines the basic design principles relating to modern farm buildings. If these are adhered to, the chances of producing an attractive building will be increased. The first point deals with key design elements such as form, materials etc, and the second section looks at the importance of detailing.

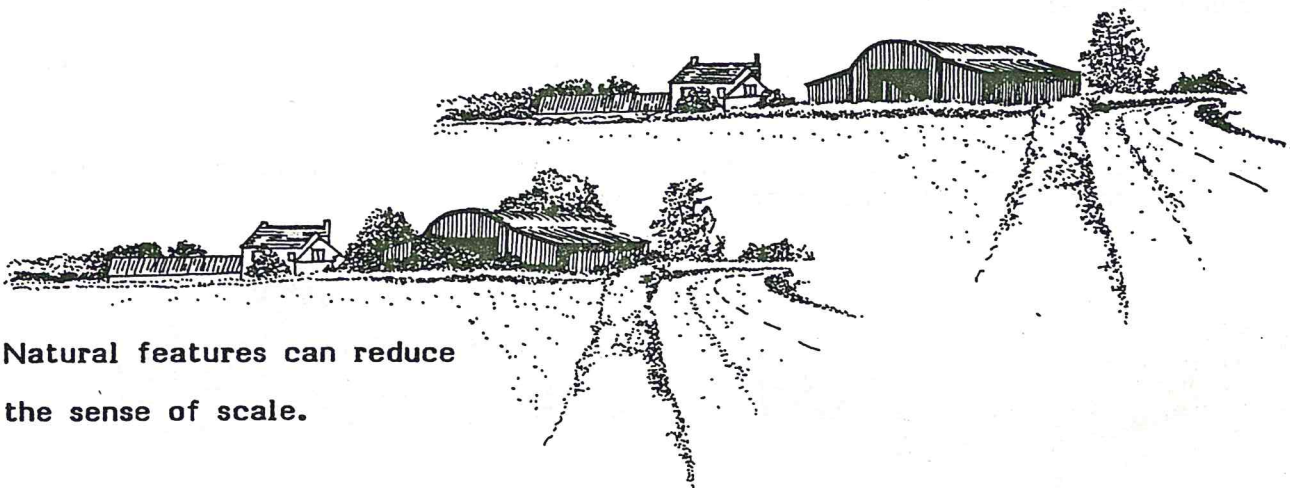
4.2 FORM

This means the shapes to be found in a building and how they are perceived by the human eye. Good form is apparent when the eye can clearly identify the various parts of a building, and add them together to make a satisfactory whole. The opposite of this occurs when, visually, the building appears to have parts missing.

4.3 SCALE

On the whole, modern farm buildings tend to be larger than their traditional counterparts. The introduction of new agricultural practices and machinery results in higher, larger span buildings which can have difficulty relating to the human scale. This is particularly the case when old and new sit side by side. Scale can be affected by several factors:-

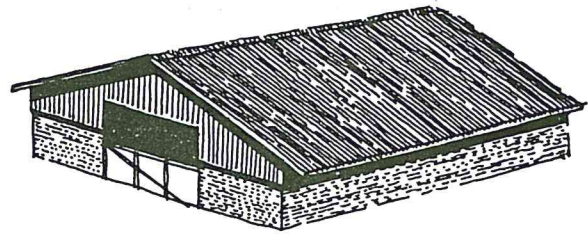
- a) **SITING** - Scale will appear greatest on skyline sites. Scale will be reduced by use of the contours or a backdrop of trees.



- b) **COLOUR** - Light colours attract attention and reflect more light thereby increasing apparent size. Roofs should always be darker than the walls.

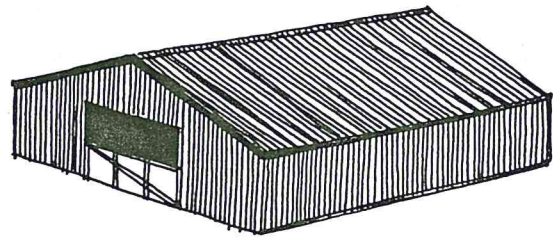
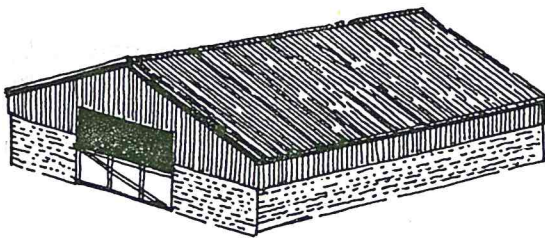
- c) **DETAILING** - Scale can be reduced by emphasising the roof overhang. This gives a horizontal emphasis, separates the roof from the walls, and helps the new building to relate to the human scale. The apparent scale can then begin to relate to existing buildings, walls, trees etc.

Roof overhang reduces scale.



Scale will appear greater if the same materials are used for both roof and walls.

Sub-division of the wall materials can unify a farm building and reduce its apparent height. This is particularly the case when combined with the use of contours and landscaping. In dividing the wall into two distinct areas, care should be taken to ensure that these are well proportioned. This can relieve the monotony of a long wall.

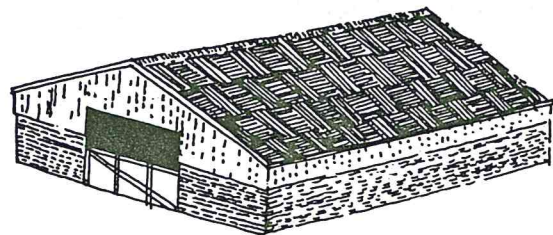
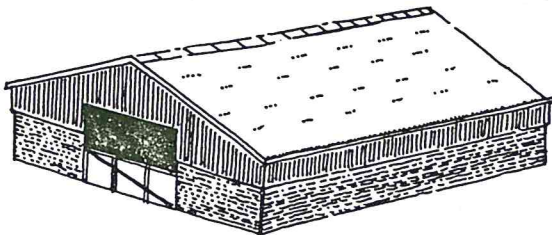


"Scale will appear greater if the same materials are used for both roof and walls."

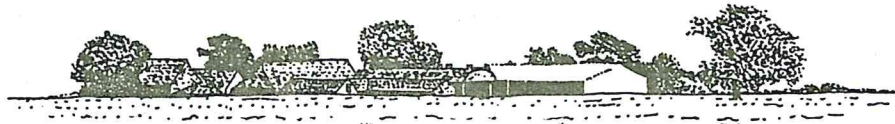
4.4 COLOUR

The use of colour is a vital component in the design of new farm buildings. In North Bedfordshire dark and warm colours predominate, which contrast with the lighter more reflective surfaces of modern materials. Some of the qualities of colour are set out below:-

- Dark colours make objects appear smaller than light colours. This can be used to reduce the impact of a large area of roof.
- Light colours reflect more sunlight and are more conspicuous. For this reason roofs should always be darker than walls.



"Roofs should always be darker than walls."

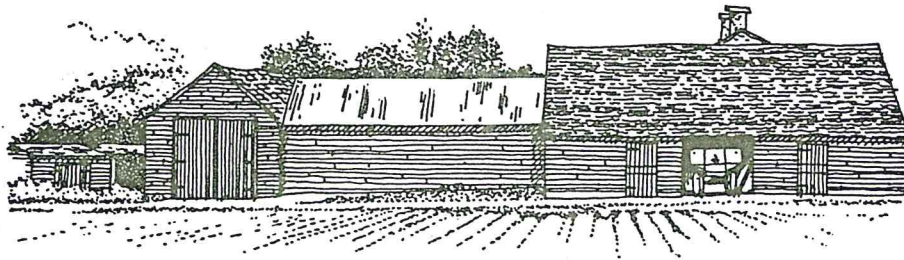


Light colours are more conspicuous.

- c) Green colours should be used with care - the landscape is not predominately green in colour and the designer should not try to camouflage the building in this way.

4.5 MATERIALS

The farmer today is faced with a vast range of materials and colours. Traditionally, local materials were used because of cheapness and ease of access. In North Bedfordshire, these ranged from black painted timber boarding, red clay pantiles, stone, and red brick. Today, with modern distribution and manufacturing methods, materials may originate from all over the country. The true 'vernacular' has therefore disappeared. However, modern buildings using modern materials can make just as much of a contribution to their environment as their traditional counterparts did.



Replacement of traditional materials with modern ones can be cheap in the short term but visually disastrous.

- 4.6 Modern farm buildings usually consist of portal frames of steel, pre-cast concrete or timber. Several factors should be considered before choosing the materials to be used. viz:

- a) Initial cost of the material.
- b) Cost and speed of erection on site.
- c) Short-term and long term maintenance costs - eg. steel frames must be protected against rusting, timber requires preservative.
- d) The visual qualities of the material e.g. dark or light, smooth or textured, solid or flimsy.
- e) Potential for future alterations/extensions or re-use.



Traditional farm buildings can still play an important role in modern agriculture. Many are listed and should not be allowed to decay.

4.7 As modern materials become expensive, more traditional materials such as brick, concrete and aggregates can now be considered. Although initial capital outlay may be higher, long term savings can result with reduced maintenance costs. For example, construction of a building with a plinth may have several advantages:

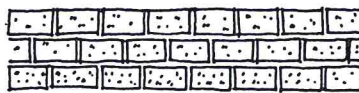
- a) Potential re-use of materials.
- b) Protection of upper material by more durable lower material.
- c) Visual interest and reduced scale.

4.8 The respective qualities of materials are described below:-

- a) **BRICK** - Durable and maintenance free. Extensive range enables brickwork to blend in with existing buildings. Useful where strength is required in retaining walls eg. potato stores. Visually attractive.
- b) **CONCRETE BLOCK** - Similar characteristics to brick but not so flexible. Painting can improve its appearance.
- c) **TIMBER** - This is easy to handle, is strong, easily fixed and has a good texture. Attached to walls as spaced boarding, it can provide ventilation and look attractive. Modern preservatives can create a variety of colours, and timber is easily replaced and re-used.
- d) **ASBESTOS SHEETING** - This is a relatively cheap material which is suitable for large span buildings. Careful colour choice is necessary and the material should not be used where damage is possible by machinery and livestock.
- e) **METAL SHEETING OR CLADDING** - This is available in a variety of profiles, shapes and colours. The material is galvanised or plastic coated for protection. It has the advantage of being relatively light in weight which may make it desirable for roof materials.



Brick.



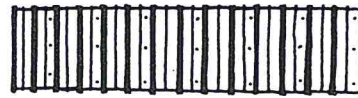
Concrete Block.



Timber.



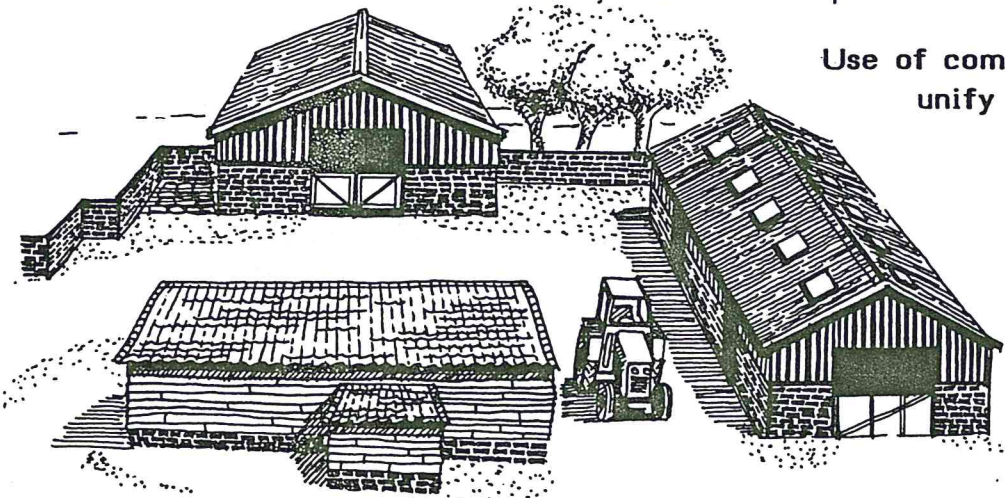
Asbestos Sheeting.



Metal Cladding.

4.9 Choice of materials should also take into account the adjacent landscape, buildings, walls, gates etc. Use of common materials eg. stained timber can create a common theme and unify the farm complex.

Use of common materials can unify the farm complex.



4.10 Pigs slurry sprayed onto the roof enables a light coloured roof to obtain a darker and weathered appearance by encouraging organic growth.

4.11 DETAILING

- a) **EAVES** - As mentioned above, extending the roof can help to reduce the scale of a building. Projecting eaves can also create interesting shadow effects.
- b) **VERGES** - Whenever possible these should have simple uses and may be in the form of asbestos bargeboards, timber fascias or parapet walls.
- c) **GUTTERS AND DOWNPIPES** - These can be important design elements and care should be taken to ensure that they cannot be damaged by livestock or farm machinery.
- d) **DOORS AND WINDOWS** - Ventilation units, windows and doors should be in proportion with the whole building. Problems often arise with large doors, particularly on gable ends. The upper corners of the door openings should be kept well away from the roof. If too close, it gives the appearance of structural weakness.



Visually weak.



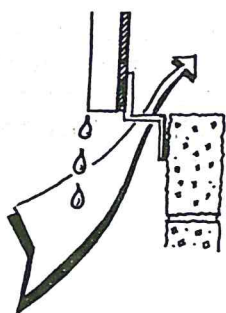
These are better.



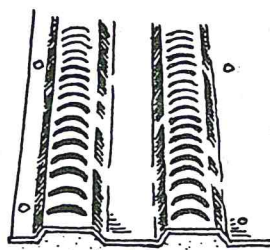
- e) **VENTILATORS** - Ventilation can be provided by two basic means:

*At the junction to materials e.g. between the upper and lower sections of a wall.

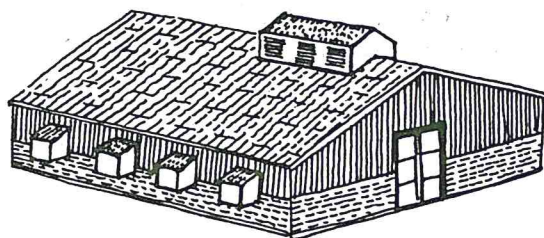
*By using ventilators on the roof or walls. These can relieve the monotony of a large roof span. Careful use of colour can assist in making these a design feature.



Ventilation at junction of materials.



Ventilated cladding.

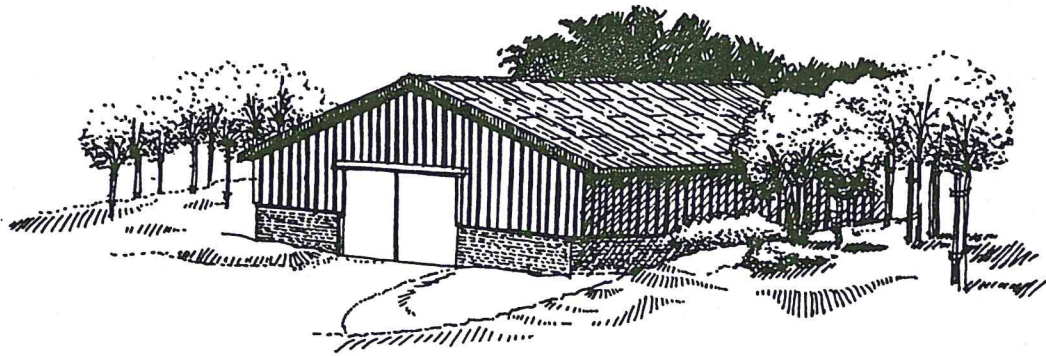


Ventilation units can be a welcome visual feature.

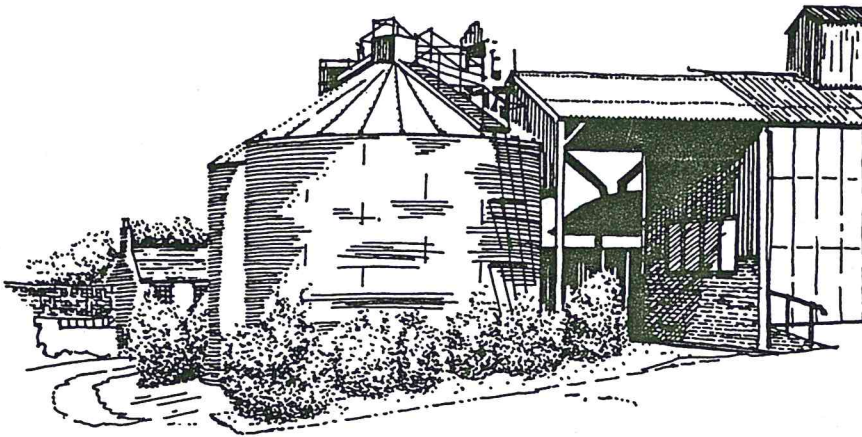
5. LANDSCAPING

- 5.1 The landscaping scheme for a new farm building is an important element in the design process. Consideration should be given to planting, banking etc. at an early stage, rather than it being an afterthought. Landscaping can involve:

- a) The use of existing features to screen a building.
- b) Tree and shrub planting.
- c) Contouring of ground levels.



Landscaping should be an integral part of a new building.



In this case, some attempt has been made to screen the silos with quick-growing trees.

- 5.2 Landscaping can help reduce the scale of a new building and make it blend into the landscape. If trees and shrubs are likely to come into contact with livestock, then some form of protective fencing will have to be used. Birds can also cause a nuisance when planting is too close to livestock buildings. This can be overcome by setting the planting further back from the building.

6. BIBLIOGRAPHY AND ACKNOWLEDGEMENTS

6.1 The following publications give useful advice about various aspects of new farm buildings:

- a) Countryside Conservation Handbook - Leaflet 11 New Farm Buildings in the Landscape, 1982 - available from the Countryside Commission.
- b) The Design Council's Catalogue of Farm Buildings structures, components and fittings - the Design Council 1977.
- c) The appearance of farm buildings in the Landscape. Fixed equipment of the farm leaflet 52. Published by HMSO for the Ministry of Agriculture Fisheries and Food 1972.

6.2 Thanks are due to Mr. R. Payne, County Secretary of the Bedfordshire and Huntingdonshire County Branch of the National Farmers Union, and to everyone who has contributed to this guide.

