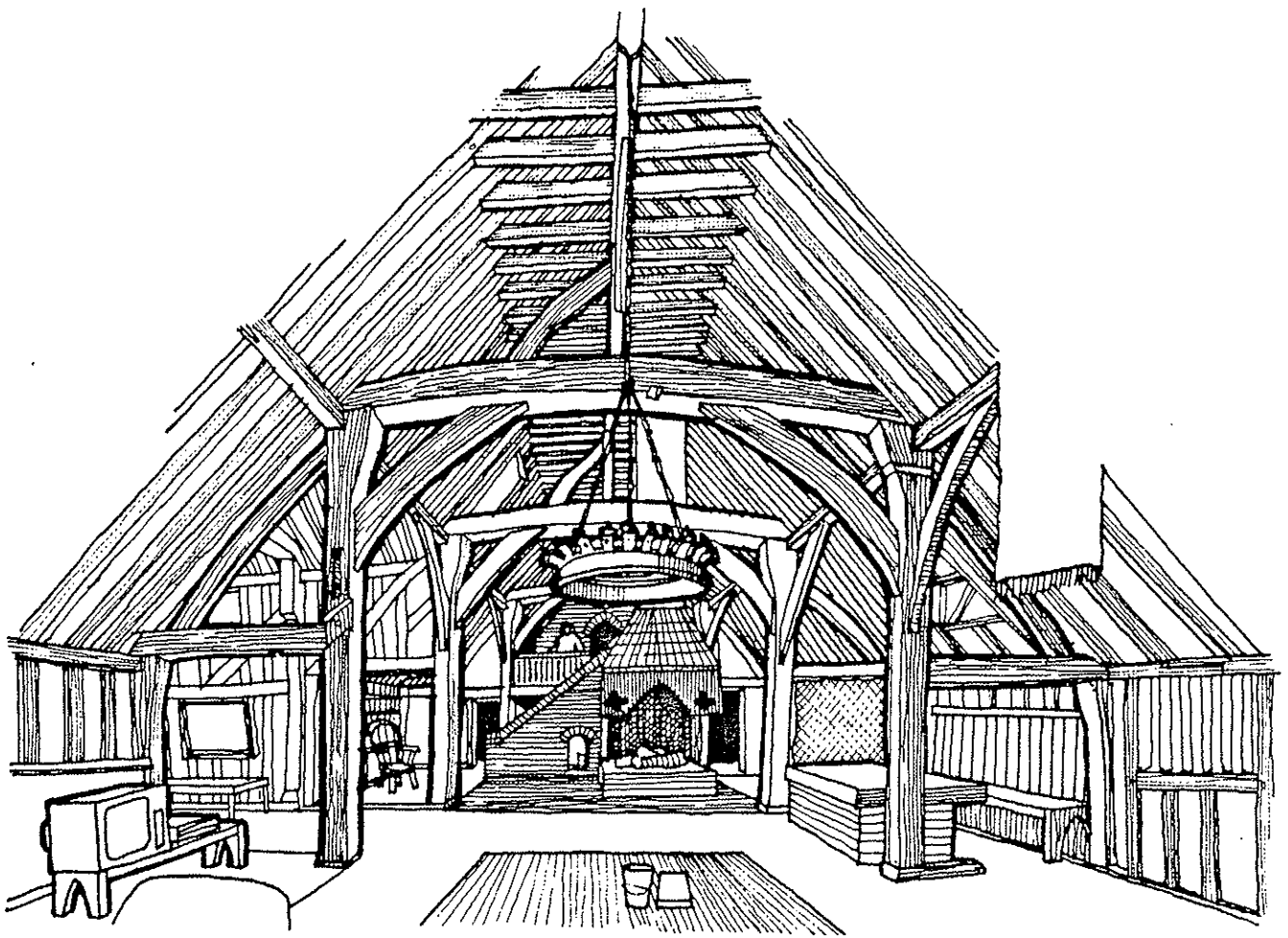


RESIDENTIAL BARN CONVERSIONS



SUPPLEMENTARY PLANNING
GUIDANCE

HISTORIC BARNs
CONVERSION TO RESIDENTIAL USE
SUPPLEMENTARY PLANNING GUIDANCE

1.0 INTRODUCTION

- 1.1 Experience has shown that the conversion of barns into dwellings is potentially one of the most damaging ways of reusing these important historic structures. Despite this there are barns which do not lend themselves to other, less damaging uses and here residential conversion may seem the only practical option. This document is intended to provide supplementary design guidance for these exceptional cases and is not intended to provide a general argument for residential conversion which will not normally be permitted.
- 1.2 The County of Essex contains a great number of barns of architectural or historic importance. As a result of changes in farming practice many of these fine buildings are now unsuitable for their original purpose. Some have long been abandoned and are falling gradually into decay while others have disappeared altogether.
- 1.3 The character of the Essex Barn is visually a very strong one. The principle reason for this strength of character is the simplicity of the shape and the limited range of external materials. The result is that, even to the uninitiated, the barn is instantly recognisable. The form is principally of a roof dominating the walls, with large uninterrupted areas. The walls, which are generally plain, are usually of a single material with no windows and limited, very simple, door openings. In flat or gently undulating landscape the barn is frequently seen in silhouette and is, apart from the church, often the largest building in the parish.
- 1.4 The timber frames of the barns are rarely exposed on the outside. Internally it is the layout of the timber frame which articulates and modifies the spaces, and is the principle factor in establishing the overall character. The interiors of large medieval barns have much in common with the characteristics of the parish churches.
- 1.5 The publication in 1979 of the County Council Booklet "Historic Barns: A Planning Appraisal", did much to encourage new uses for redundant barns. Residential conversion has been much the most favoured option, and the outcome of these conversions had evoked a very mixed response.
- 1.6 The recent spate of residential conversions of historic barns has only been a partial success. Although residential conversions have resulted in many timber framed barns being guaranteed an extended life, in most cases the conversion schemes have been poorly designed, and, despite considerable efforts by planning authorities, have resulted in schemes which have seriously damaged the nature of the buildings: the barn character has been seriously modified, and the results have been hybrid buildings of very limited visual appeal, frequently quite unrecognisable as barns.

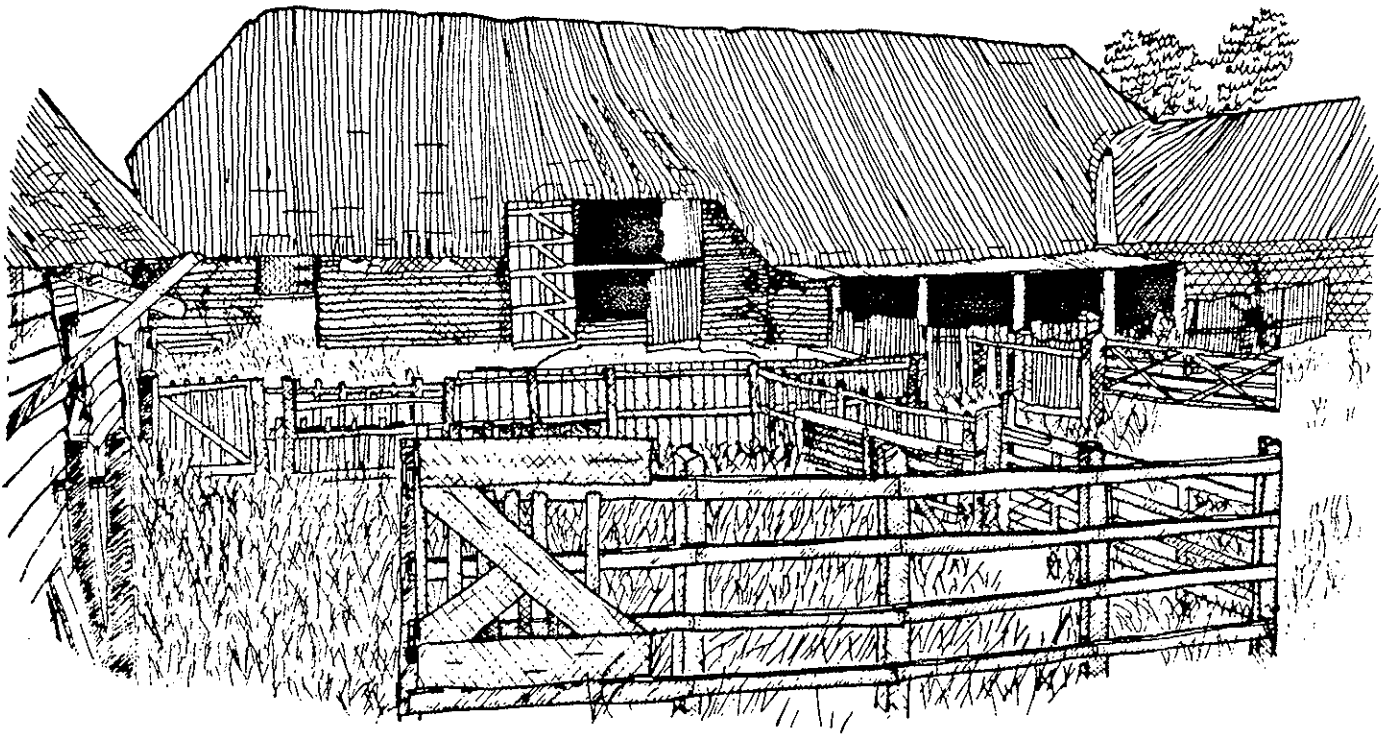


Fig.1

Farmyard Group

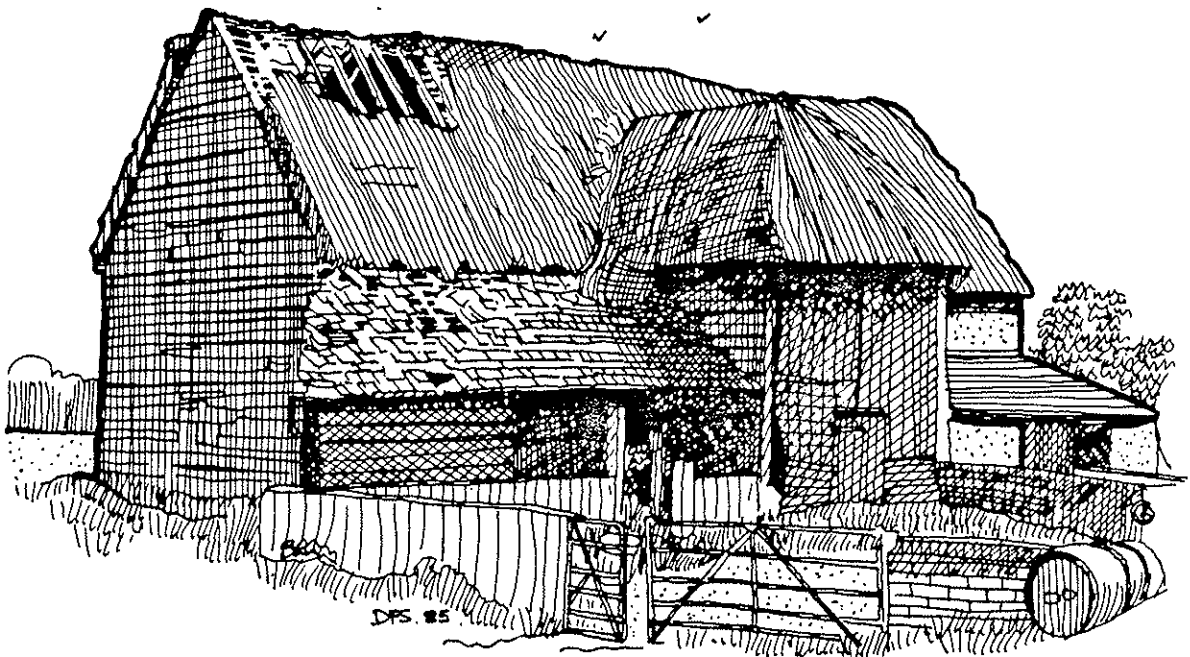
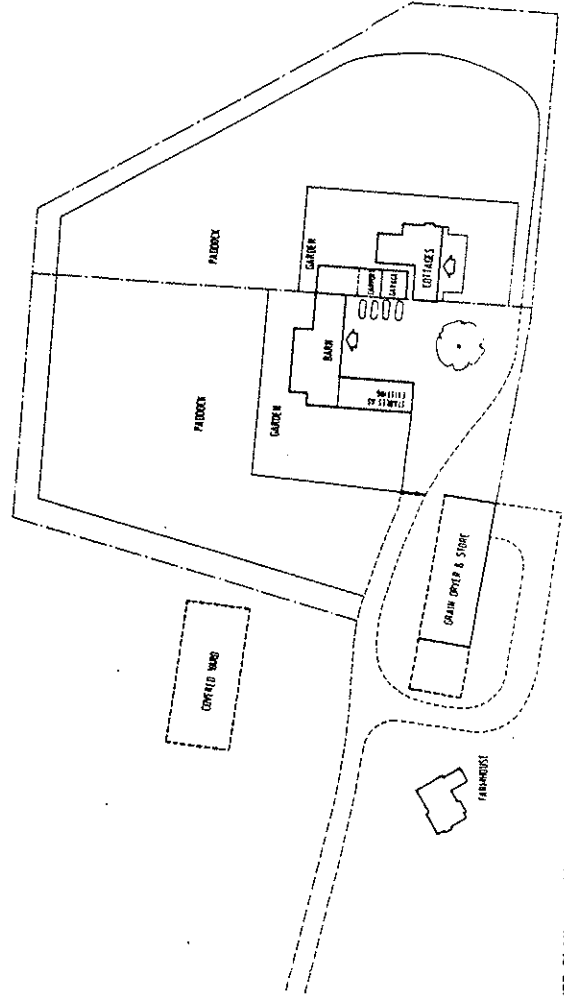
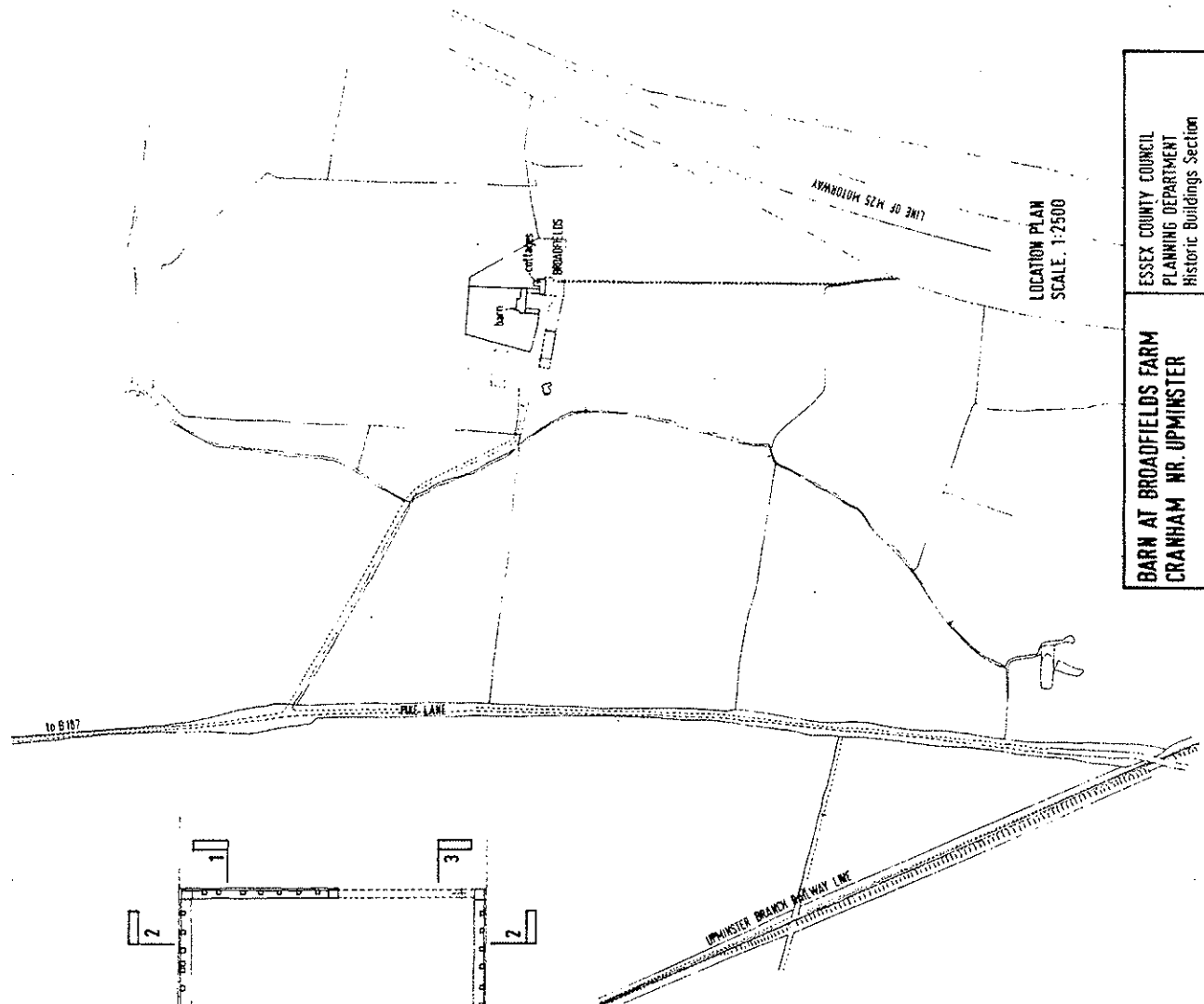
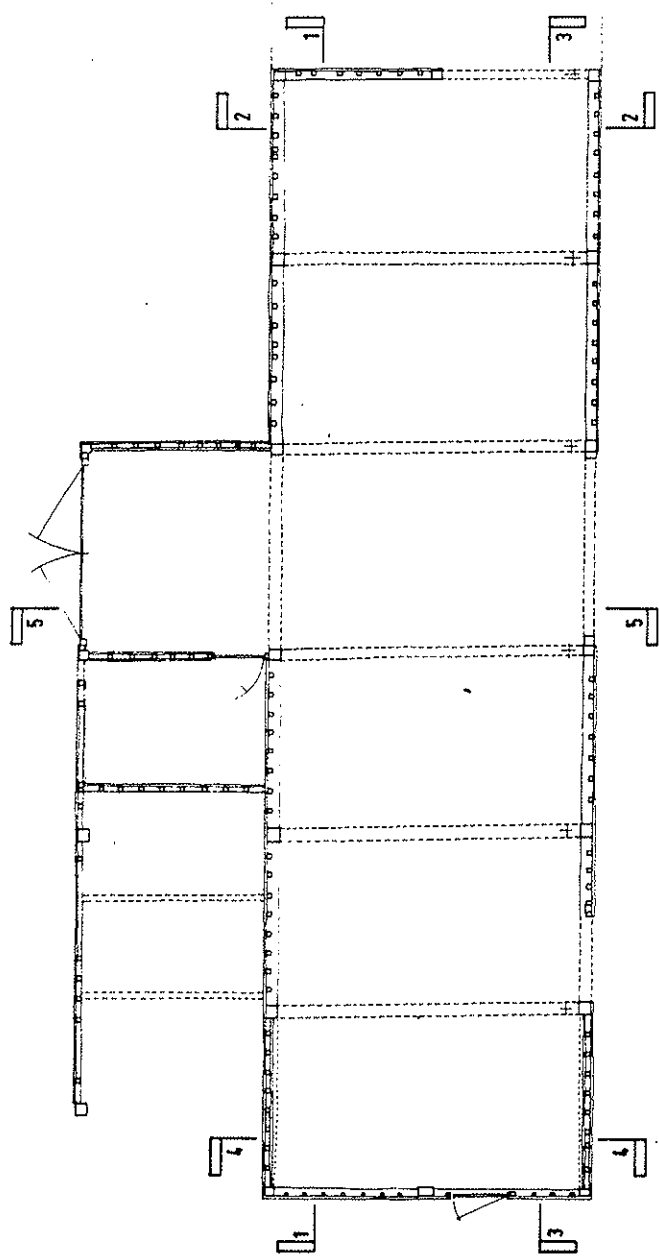


Fig.2

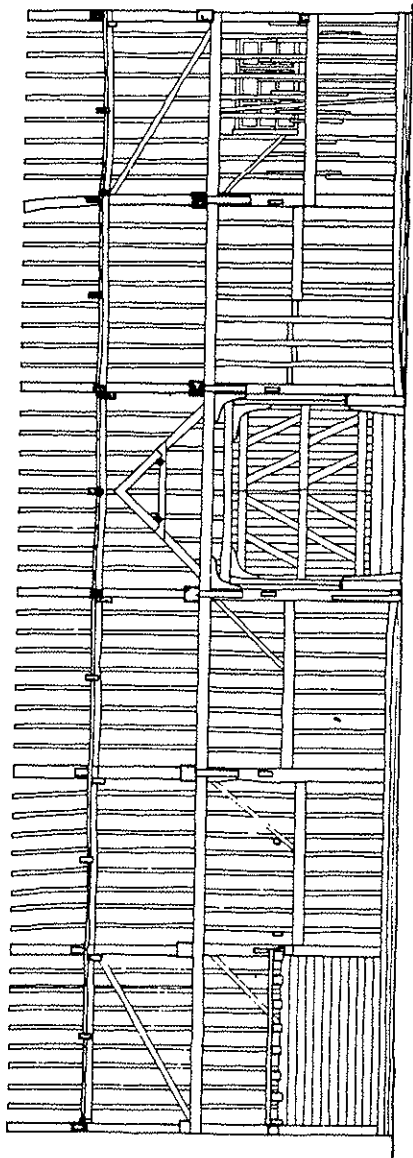
Solitary Barn in the Landscape

- 1.7 Residential conversion is the most popular, but the most difficult form of re-use. By its very nature it inevitably requires a high degree of change and a commensurately high level of design skill in order to achieve that change without destroying the barn's character. It must however be acknowledged that, although successful residential conversions are difficult to achieve, they are in some situations the only viable alternative to the complete loss of the barn.
- 1.8 With this in mind the following Supplementary Guidance Notes are produced with the intention of encouraging more appropriate and satisfactory solutions. It is hoped that these notes will provide a clear indication of the Planning Authority's attitude and will, to some extent, avoid lengthy design negotiations on each particular proposal.
- 1.9 Applications purely for the change of use of listed barns to residential, will normally be refused. The detailed design aspects are as important, in some cases more important, than the planning principles and both aspects must be considered together.
- 1.10 These notes are intended only to deal with the question of residential conversion of Listed Barns. Unlisted barns within Conservation Areas may, on occasion, be favourably considered for residential conversion where this use would seem to offer environmental advantages. The criteria for such conversions may differ from those set out in this document and must be the subject of discussion with the Local Planning Authority.
- 1.11 Barns of exceptional architectural or historic interest will rarely be considered suitable for residential conversion as this would result in an unacceptable degree of alteration. In general these will be the barns that are listed as Grade II* or Grade I in the Department of the Environment's historic buildings lists.
- 1.12 Those barns which are considered to be of insufficient architectural or historic interest to be listed and are not within Conservation Areas are outside the scope of this document. In such cases proposals for residential conversion will be dealt with by the Local Planning Authority in accordance with their normal planning policies.
- 2.0 THE BARN CHARACTER
- 2.1 The essential characteristics of an Essex barn are made up of the roof and wall forms and a limited range of materials. Originally roofs were either thatched or tiled, then latterly natural slates and pantiles were introduced, particularly on outshots. Wall materials are limited to tarred boarding, smooth rendering, brick (or brick and flint) walls, brick plinths and occasionally brick noggin between the timber framing.
- 2.2 Many roofs are hipped or half hipped and midstreys may be either hipped or gabled.

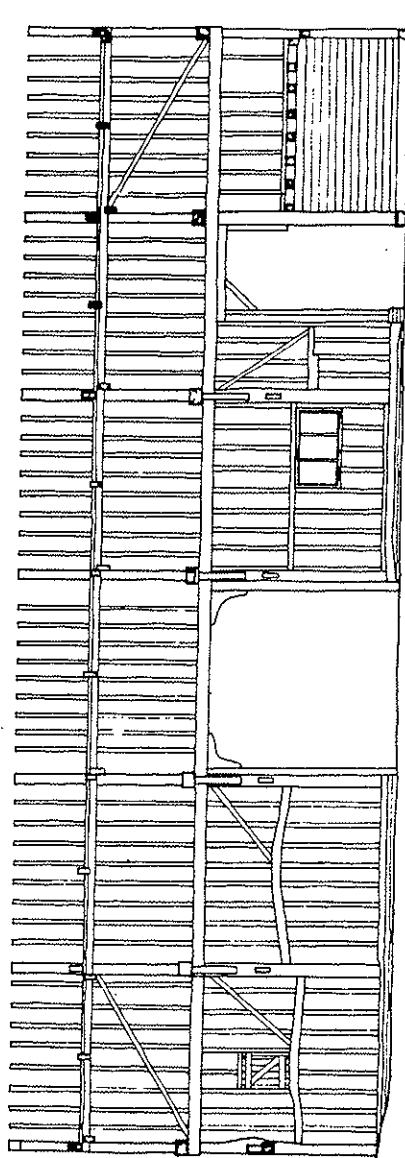


BARN AT BROADFIELDS FARM CRANHAM NR. UPMINSTER LOCATION, SITE & EXISTING FLOOR PLAN		ESSEX COUNTY COUNCIL PLANNING DEPARTMENT Historic Buildings Section
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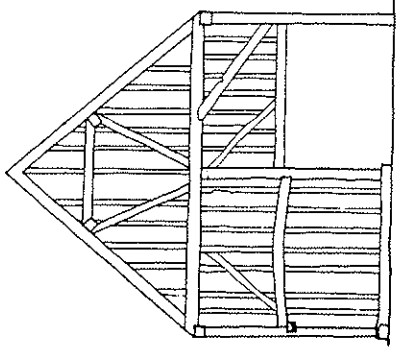
Fig. 3 (reduced for publication)



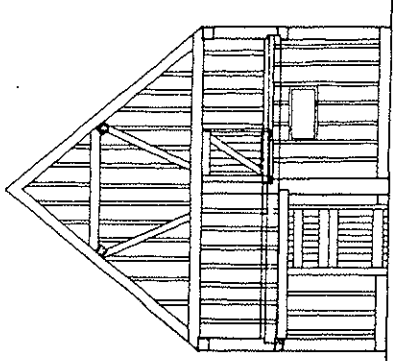
SECTION 1-1



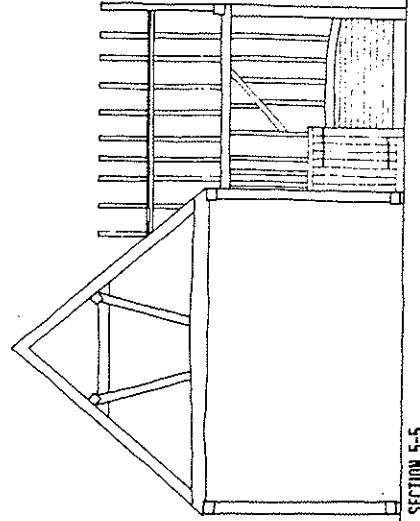
SECTION 3-3



SECTION 2-2



SECTION 4-4



SECTION 5-5

BARN AT BROADFIELDS FARM, CRANHAM, NR. UPMINSTER		ESSEX COUNTY COUNCIL PLANNING DEPARTMENT Historic Buildings Section	
		Scale: 1/50	DWG. NO. 70/203/2A
SURVEY AS EXISTING INTERIOR SECTIONS		Date: JULY 84	Drawn by: S Ikem

Fig.4 (reduced for publication)

- 2.3 Earlier barns were frequently aisled and had low eaves. In later periods this form is frequently imitated by lean-to outshots, particularly on the side of the building which has the midstreys or porch.
- 2.4 Because of this simplicity of form together with the limited range of external materials and the scale of the building, the barn is instantly recognisable even to the untutored eye.
- 2.5 Internally the character of the barn is essentially that of an uninterrupted space articulated by the rhythm of the bays. Additional interest is created where aisles exist and by the intrusion of the midstreys. The comparison in spatial content between the barn and a parish church is most apt.
- 2.6 From both the internal and external aspect the lack of window openings and the limitation of door openings to the great doors in the midstreys are essential parts of the character of the barn.
- 2.7 Barns are usually found as either one component of a farmyard group, or relatively isolated in an increasingly open landscape (figs. 1 and 2). The particular character of the site is an important aspect which must be carefully considered when an application is made.

3.0 APPLICATIONS FOR RESIDENTIAL USE

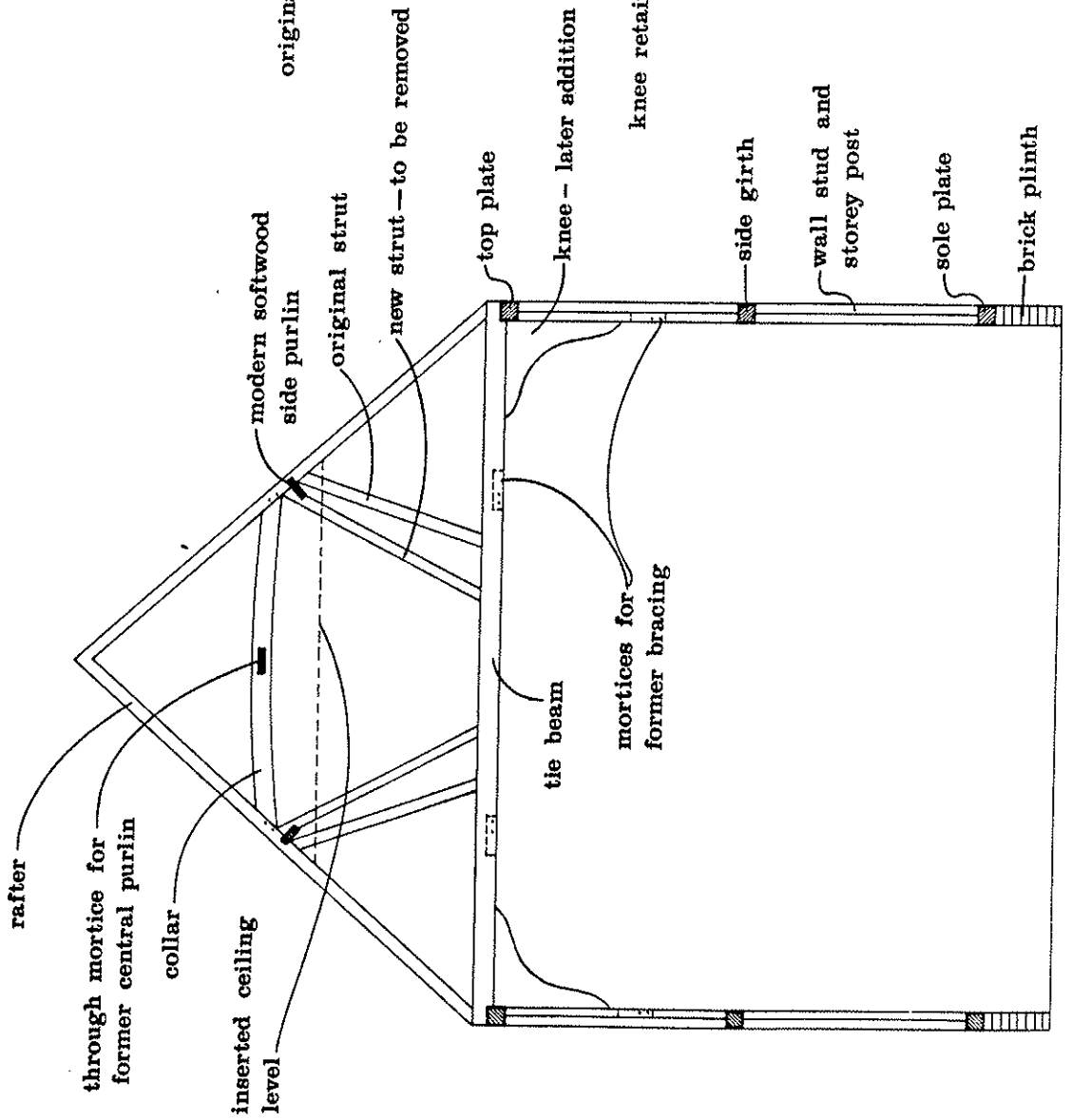
- 3.1 All applications for Planning and Listed Building Consent for conversion should be accompanied by a written statement. This statement must provide information as to why the barn is redundant and why it is considered to be unsuitable for any agricultural or alternative non-residential purpose. The most satisfactory use for a barn will always be an agricultural one. Uses allied to farming will be the best ways of retaining both the internal and external characteristics. Other preferred uses which retain the single open volume include storage, community uses, offices or some form of light industry or craft activities. Only when all these alternative avenues have been considered and found inappropriate should residential conversion be considered. The written statement accompanying the application must state in detail what efforts have been made to seek alternative non-residential uses.
- 3.2 The Local Planning Authority may consult the Ministry of Agriculture, Fisheries and Food on the agricultural aspects of the proposal. This consultation may be sought by them prior to an application being submitted.
- 3.3 Prospective applicants should also be aware that the Local Planning Authority, when granting consent, may choose to remove the Permitted Development Rights to allow continuing control over the appearance and setting.

4.0 SURVEY DRAWINGS

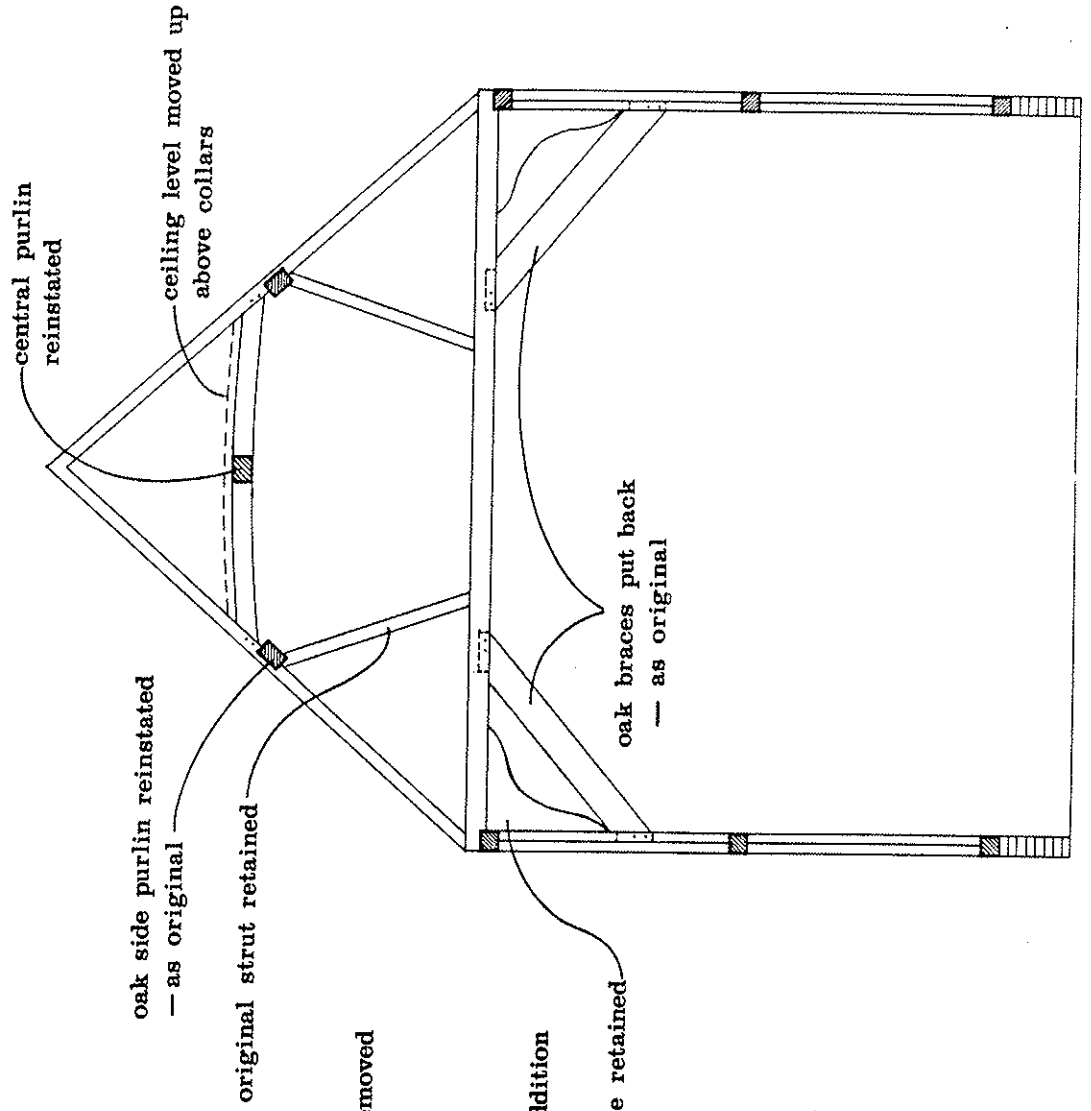
- 4.1 All Planning and all Listed Building applications must be accompanied by detailed survey drawings of the existing fabric (figs 3 and 4). These should be to a scale of not less than 1:50, showing all the

Fig. 5
EXAMPLE OF STRUCTURAL REPAIR TO BARN WITH
CENTRAL AND SIDE PURLIN ROOF

BEFORE



AFTER

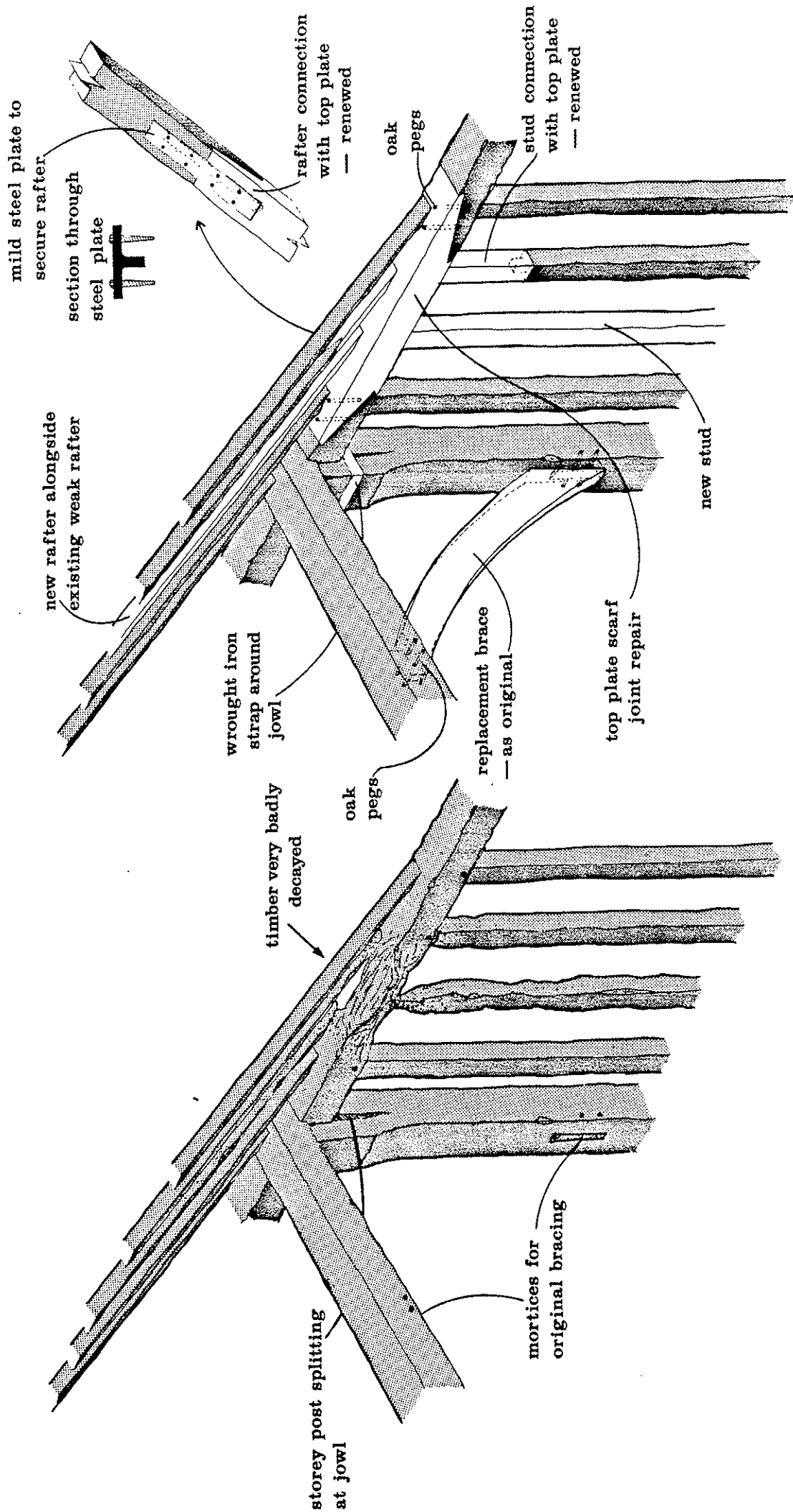


RECOMMENDED METHOD OF REPAIR — JUNCTION OF TOP PLATE, STOREY POST AND TIE BEAM

Fig. 6

BEFORE

AFTER



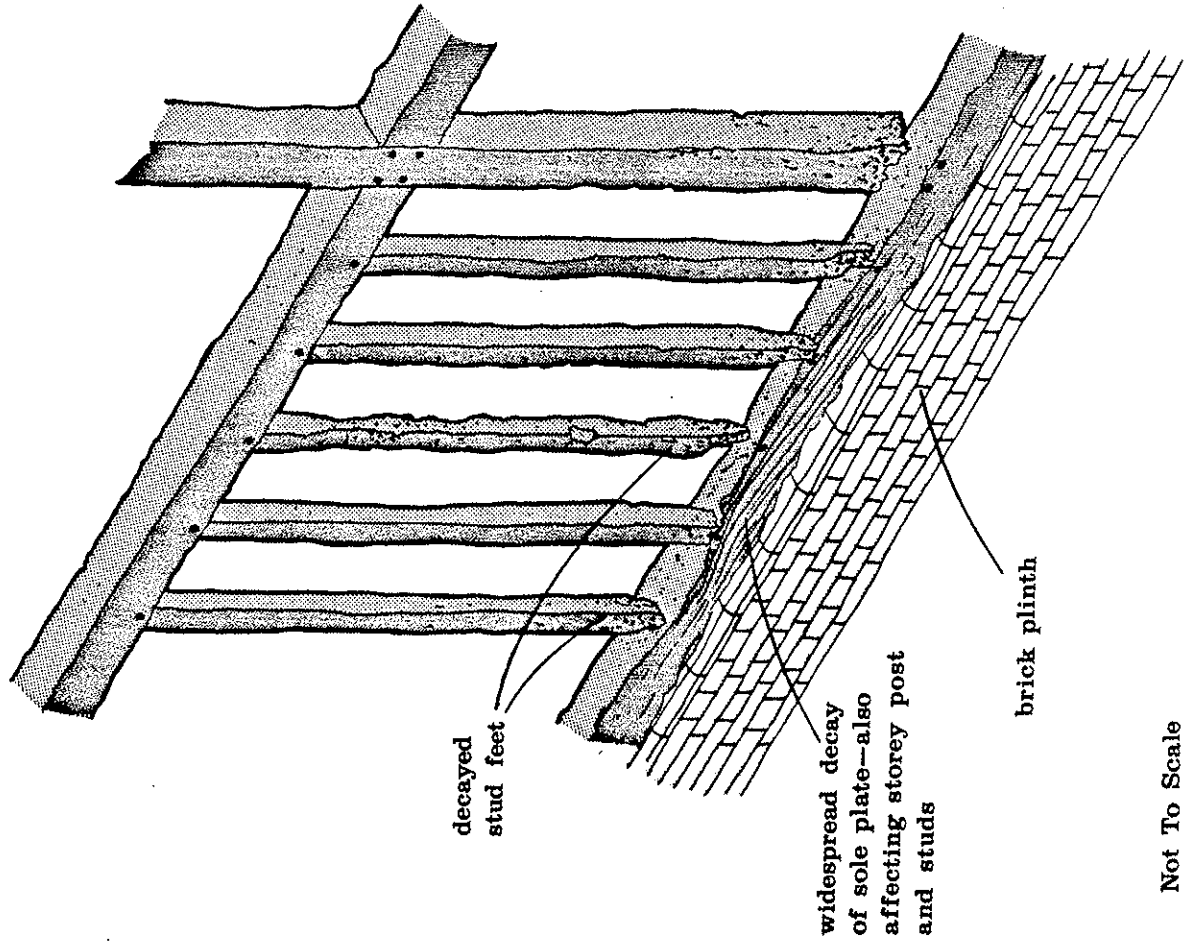
ALL NEW TIMBER SHOWN
WITHOUT SHADING

Not To Scale

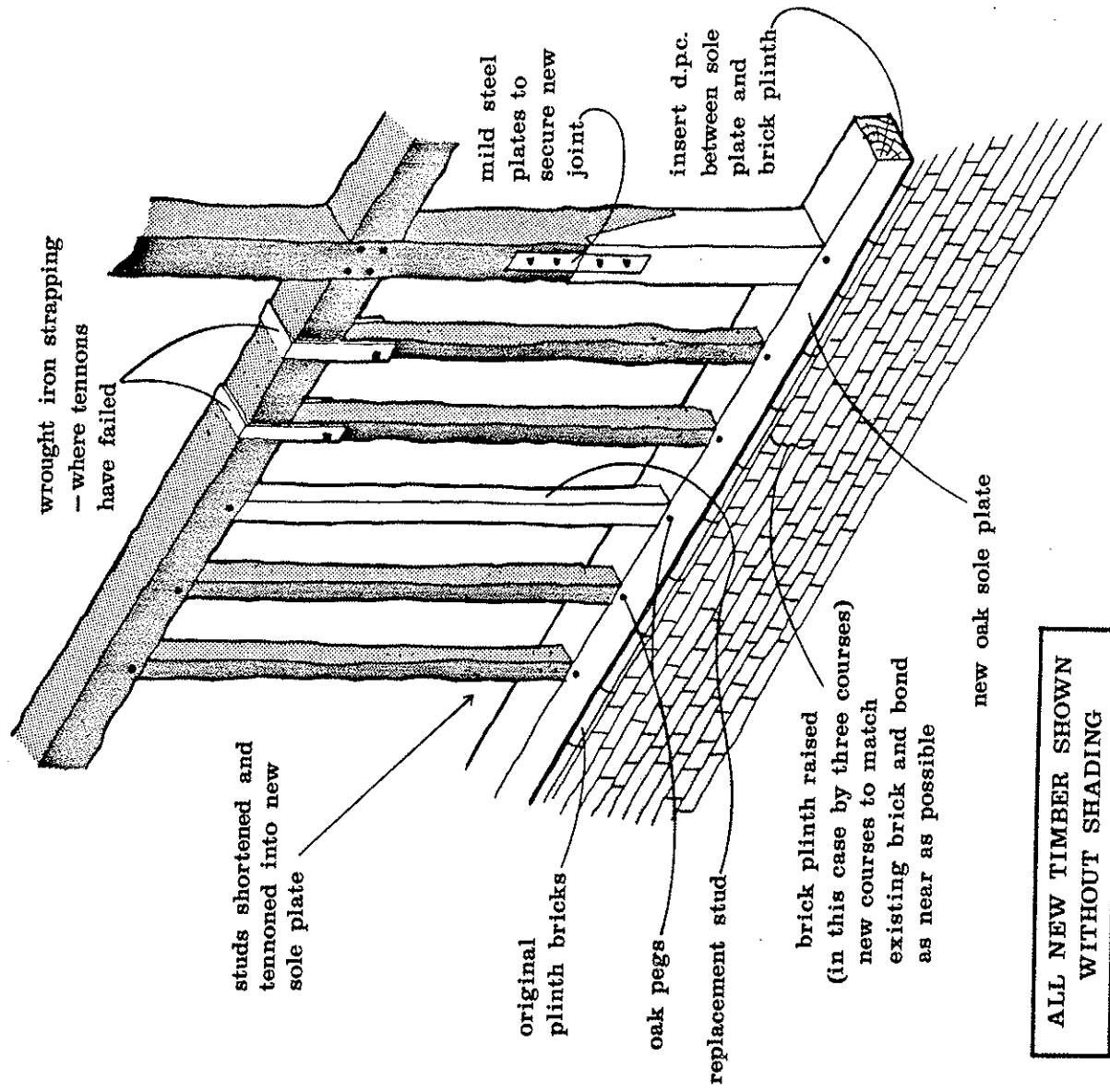
Fig. 7

RECOMMENDED METHOD OF REPAIR—SOLE PLATE,
STOREY POST AND STUDS

BEFORE



AFTER



ALL NEW TIMBER SHOWN
WITHOUT SHADING

Not To Scale

elevations and both cross sections and longitudinal sections. This is to ensure that there is an accurate record of the existing building(s) against which alterations can be assessed and monitored.

- 4.2 The main framing, bracing and stud work should be accurately depicted and the exact sizes and positions of all the existing openings must be clearly shown. These survey drawings must be adequately dimensioned with special care taken to measure accurately the roof pitch and the height from the existing floor level to the underside of the tie beams. Arch bracing should be carefully indicated with the dimensions giving the depth and length of reach and the accurate curvature. Missing braces and other members should be dotted on. External elevation drawings must provide details of the existing cladding, including average depth of typical weatherboards and any areas of patterned plaster or details of brick noggin.

5.0 STRUCTURAL REPAIRS (Figs. 5, 6 and 7)

- 5.1 The existing frame must be properly repaired. Repairs should be carried out insitu - it is not an acceptable solution to completely disassemble the building and subsequently rebuild it. All missing members should be replaced. Where a shaped member such as an arch brace is required for either structural or visual reasons care should be taken to ensure that the new timber has the correct curvature. The timber used for repair, where it is to be seen, should always be new and of the same type as the original building - generally oak, sometimes elm, or softwood in later barns. New timber should be marked with the date of repair. Defective members should be either completely renewed or have new timbers spliced on. Cills, where rotten, must be replaced and studs rejointed to them. Where practical the damp proof course should be inserted beneath the plate.
- 5.2 Repairs of split or broken timbers may be effected with wrought iron strapping. The use of second-hand timber is wrong, first for the practical reason that it is difficult to work, and secondly because it is likely to confuse the historic evidence. Further advice on the repair of timber frames is given in "Conservation in Essex No. 4", and this advice is generally applicable to barns.
- 5.3 During the conversion work some timber may have to be removed to form new door and window openings. In all cases this removal should be limited to the wall studs and jack rafters only. Often it will be found that some of these are original and some are later replacements. The need to preserve the former should influence the decision of new openings. No braces, tie beams, side girts, principal posts or principal rafters should ever be cut or removed. No attempt should be made to straighten up frames unless the racking or leaning is such as to make the building structurally unsound.
- 5.4 Occasionally special features are found such as original window or door openings subsequently infilled or boarded over. These must be retained and, where possible, it is desirable to expose them, at least to the inside view.

6.0 CONVERSION OF THE EXISTING STRUCTURE

6.1 In any conversion proposals care should be taken to retain as much as possible of the existing structure:

- (a) The main framing members, storey posts, top plates, tie beams and main bracing must all be retained.
- (b) Crown posts or other structural roof elements must all be retained insitu.
- (c) All wall and wind bracing must be retained insitu.
- (d) Original stud-work and rafters must be retained insitu unless their poor structural condition prevents their reasonable re-use. The openings should be positioned so as not to promote the removal of standard original studwork or rafters.
- (e) Old and original sole plates must be retained where their condition allows this.
- (f) Existing brick plinths must be retained and generally not interrupted by new openings. Any replacements and repairs must match the existing brickwork in colour, texture, bond and pointing.

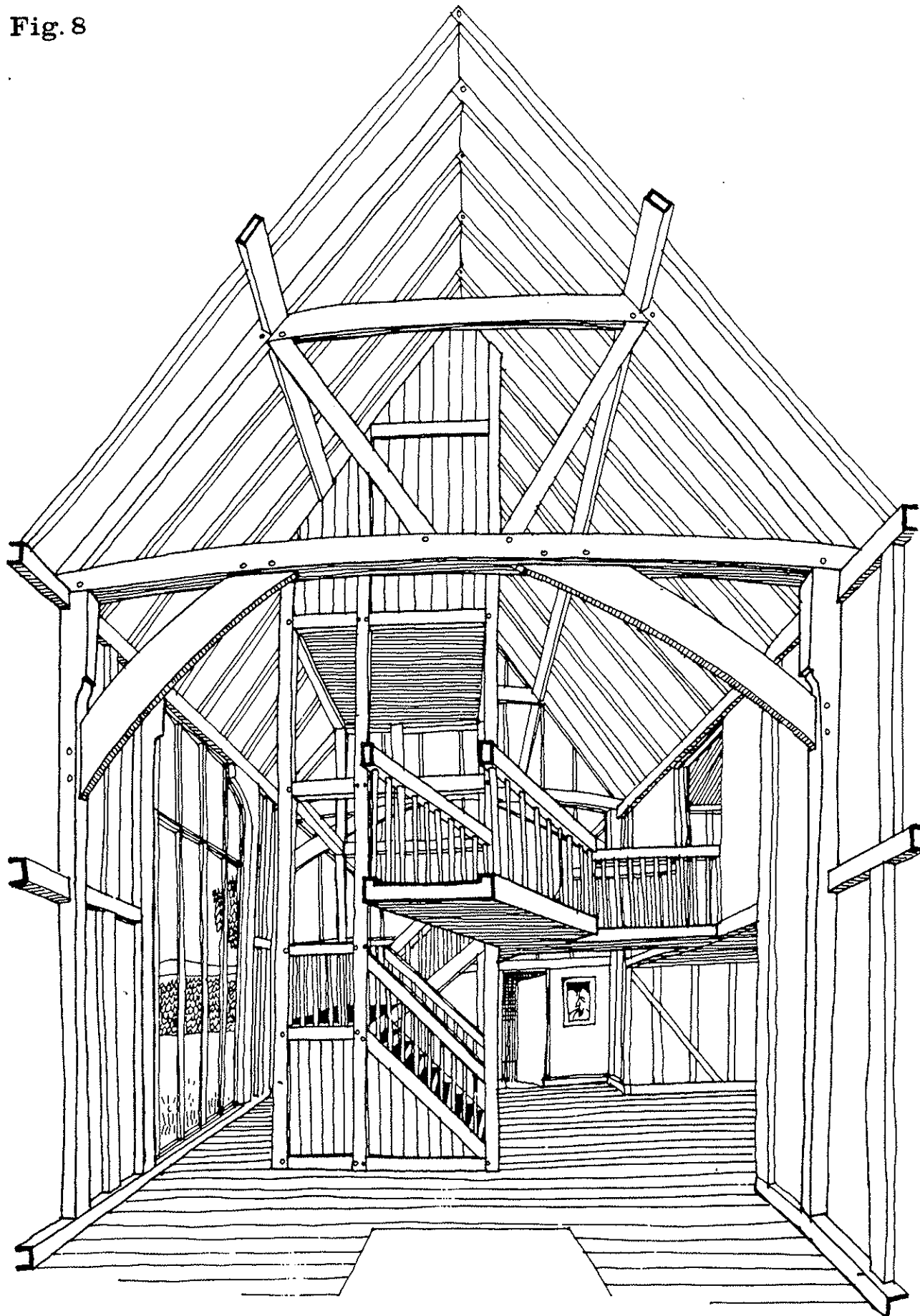
6.2 The Planning and Listed Building Application drawings must provide clear indications as to the general condition of each element of the structure and the intentions as to repair, retention or replacement. Where such information is not noted on the drawings the assumption will be made that this element is to be retained. A small amount of excavation to allow an increase in headroom will usually be permissible, providing this more readily permits a more suitable proposal, but care must be taken to ensure the stability of the structure at all stages.

7.0 NEW STRUCTURE

7.1 New internal partitions where essential should be placed clear of existing bay divisions. Care must be taken to ensure that part bays so formed are utilised only for ancillary service uses. All major spaces must thus be defined by original storey posts in or near each of their corners. New partitions should be timber framed construction so as to avoid structural movement problems between old and new work.

7.2 All new inserted floors, galleries or staircases must be supported in a manner structurally independent of the existing frame (fig. 8). Such supports can consist of free standing brick screen walls, cast iron columns or steelwork encased in suitable fireproof material. New timber supports should normally be avoided unless painted or treated to differentiate them from the existing structural timbers of the barn.

Fig. 8



Interior of a converted 17th century barn showing:-

- ① Fully glazed door opening.
- ② Stair and gallery as a free standing structure rather than wrapping around the side wall.

8.0 TIMBER FRAMED BARNS - INTERNAL SPACES

- 8.1 A substantial part of the internal volume of the barn must remain open as one space from floor level to ridge. Minor encroachments into this space, such as a spiral staircase or a small access gallery, will usually be considered acceptable. As a general guide:
- (a) A three bay barn should have a substantial part of two bays open as one uninterrupted space.
 - (b) A four bay barn should have at least two full bays open.
 - (c) A barn of 5 or more bays should have at least 3 bays treated as one single internal volume.
- 8.2 In any of these cases the internal open volume can be partially modified by the use of small below-eye-level permanent screens, movable screens or permanent glazed screens. In the case of an aisled barn the aisles should be considered inseparable from the bay section which they abut.
- 8.3 In barns where the tie beams are set sufficiently high to allow two full storeys beneath them an alternative approach can be adopted. The upper floor can be treated as a single open plan living area with the roof space open to view for the full length. Some low level screening to articulate areas of differing functions will be permitted. The ground floor will primarily be for bedroom/bathroom accommodation, but with additional space used for study, games room or children's playroom. With this concept one full bay should still be treated as an open volume from floor to ridge. The midstreys when treated as a single internal volume should be regarded as an extra open volume and not as a substitute for the required single open volume in the main body of the barn.
- 8.4 Permanent internal fittings such as staircases should be robustly detailed, rather in the manner of stairways in mills and early industrial buildings. The use of neo-Georgian or other pseudo historical details must be avoided.

9.0 TIMBER FRAMED BARNS - WINDOWS AND DOORS

- 9.1 The general intention must be to limit the amount of window opening to the minimum compatible with reasonable living conditions. Windows should be located and sized to provide necessary daylight but not to provide views. Open plan solutions are thus ideal in that lighting can be shared or borrowed from a limited number of openings to light relatively large areas of floor space.
- 9.2 It is preferable for all window openings to be fitted into existing openings or into areas where the existing structure has been removed or is decayed to a degree beyond repair.
- 9.3 Where further windows are necessary the following options can be pursued:
- (a) New narrow slot windows in purpose made metal frames fitted between the existing studs. Ventilation achieved by means of glass louvres.

- (b) New windows of the conventional casement or sliding type fitting into completely new softwood frames outside the existing structural frame. The existing studwork can then be left complete behind the new window unit. With this option it will be necessary to extend the rafter feet or sprockets to regain the original roof overhang.

This second solution gains extra wall thickness for insulation but can produce visual difficulties where it is desirable to retain an existing brick plinth.

- 9.4 In all barn conversions it is desirable to suggest the former single volume character of existing space. With this in mind the fact that some of the barns may have been converted to form two floor levels should not be demonstrated obviously on the outside. Separate windows on each floor should not be used. Such window arrangements, if they cannot be avoided entirely, should be limited to the narrow gable end walls as they will be less noticeable in this position.
- 9.5 Each long major elevation of a converted unaisled barn should have at least one window, or group of windows, running the full height or most of the full height between plinth and eaves. Such a window will suggest a full height internal volume thus expressing the intrinsic characteristic of the archetypal barn. Barns without midstreys usually have a great door opening in both long elevations, and this provides the ideal location for such a large window. With aisled barns such a solution is not possible, except where a large window can be provided in gable ends.
- 9.6 Midstreys should always express their former carriage arch status, either by fully glazing the complete opening or by retaining and permanently sealing the great doors uninterrupted by any obvious window openings. These are dynamic elements of form and this characteristic should be exploited. In the former case the glazing can be either on the surface or set slightly back to form a recessed porch. Either way the sub-division of the glazing should not suggest an internal first floor level, even though such a floor may be concealed behind. Midstrey openings partly infilled and partly glazed should be avoided. Large doors in main walls should be retained, preferably still capable of being opened and closed. This provides both security and thermal insulation.
- 9.7 New window frames and doors should be painted to match the surrounding wall surfaces in order to reduce the visual impact. The use of tinted glass for smaller openings is desirable as this makes them less obtrusive. Tinted glass in great doors or midstrey windows is less effective - glazing here should provide the minimum visual barrier.
- 9.8 New doors should be simple boarded doors. Pseudo-historical types, either panelled or glazed, must be avoided and door hoods should not be used.
- 9.9 Windows in lean-tos or aisles should be designed with extra care so as to be as unobtrusive as possible. A window in the outer wall of such a structure will appear to be in conflict with the inward looking fall of a lean-to. A continuous eye-level band of windows set in front of the studs can be a solution as such a strip is less noticeably directional.

10.0 ROOF TREATMENT

- 10.1 The intention must be to retain the roof profile, form, and materials as far as practicable. Dormer windows should not be used, nor should Velux or similar small rooflights. Dormer windows are unacceptably damaging to the profile of the roof and small roof lights produce distinctive patches of reflecting light which disturbs the overall texture of the roof plane. In some situations relatively large areas of patent glazing may be used, but consideration should be given to achieving proper ventilation and the avoidance of too much solar gain.
- 10.2 Many barns have had more than one roof covering in the course of their history. Where the roof is of peg tiles or thatch this roof material must be unchanged. Slate or clay pantiles whether original or a subsequent later replacement should be retained. More recent roofs of asbestos will need replacing with thatch, natural slate, peg tiles or pantiles, whichever is the most appropriate. Existing black painted corrugated iron roofs are often attractive and in certain circumstances it may be a practical solution to retain them.
- 10.3 External brick chimney stacks should not be used: they are destructive of the agricultural character of the barn and introduce an inappropriate residential character. Where flues are required they should be of metal, of minimal size and painted or stove enamelled with a dark matt finish. They should be sited in as unobtrusive position as possible. Soil and vent pipes should be taken to discharge at high level, preferably through gables rather than intruding onto the main roof slopes. The problem of taking flues through thatched roofs can best be avoided by designing detached external non-brick flues.

11.0 WALL CLADDING

- 11.1 Exterior cladding materials should not be changed. Many early barns had exposed timber frames and almost invariably these have been subsequently covered with boarding or plaster. To re-expose the frame as an external finish provides insurmountable difficulties of insulation and weatherproofing: this should not be attempted. Replacement weatherboarding should be of a similar size and profile and must be tarred or finished with a similar textured dense black material. Plaster should normally be white or buff cream retaining a utilitarian barn character. Where barns are partly boarded and partly plastered minor revisions to the area of each material would usually be accepted where it is of assistance in achieving an harmonious appearance. Minor external features such as hatches, ventilation, dove and owl holes and pentice boards should be repaired and retained or replaced in replica. Care should be taken to ensure rainwater goods and downpipes, where strictly necessary, are unobtrusively sited and neatly detailed. These should always be in painted metal, not plastic, and painted in a colour to merge with the background. If timber troughing remains it must be retained or replaced in matching detail.

12.0 EXTENSIONS

- 12.1 Extensions to barns should normally be unnecessary. The provision of draught lobbies can invariably be arranged within the existing structure, either within the midstreys or alternatively within the outshuts. On a barn without outshuts where extensions are necessary, new lean-to structures might be appropriate alongside midstreys. On no account should domestic porches or other small extrusions be contemplated.
- 12.2 Extensions subsequent to the initial conversion proposal are unlikely to be favourably considered (see paragraph 3.3).

13.0 THE SETTING OF THE BARN

- 13.1 Barns are found either in farmyard settings, often still related to the existing farmhouse and other secondary agricultural buildings or as isolated buildings within the countryside (figs 1 and 2). In the farmyard setting the essential characteristic is that of a working environment free from any attempt to formalise or prettify. Conversion in such a situation should follow this lead and every care must be taken to avoid stamping the setting with suburban residential characteristics. Where the original farmhouse still exists care must be taken to ensure that the barn still remains as a secondary and subservient building. In the case of isolated field barns the building is often seen to be growing out of a field with little around it save growing crops, hedgerows and trees. Again in this situation every effort must be made to ensure that this setting remains with the minimum of change.
- 13.2 Many barn conversions are spoiled by the treatment of the immediate surroundings. Obtrusive domestic elements such as clothes lines, patios, screen fences, flower borders and swimming pools can be visually disastrous and often undermine all attempts to preserve the barn-like appearance. Where the barn is part of an existing farmyard group, walls and old outbuildings should be retained and repaired in order to screen and enclose such domestic intrusions. The construction of new walls to recreate the effect of an old farmyard can in certain cases be a suitable solution.
- 13.3 Garaging is best provided within existing adjoining structures but in the absence of suitable buildings new structures may be accepted. In this case they should be designed to imitate farm outbuildings and carefully grouped in customary farm courtyard manner. In large multi-occupational schemes the garaging should be grouped to form one building block. The objective should be to ensure that all domestic elements are grouped close to the barn and screened from the important viewpoints. The positions of new elements must be indicated on the application plan as part of the general landscaping scene. Domestic servicing elements such as liquid gas containers, oil tanks and sewage plants should all be housed in suitable containing structures.
- 13.4 Some hedge or tree planting is usually desirable and it should be made up with indigenous species suitable to the specific locality. Quick growing coniferous varieties should never be used.

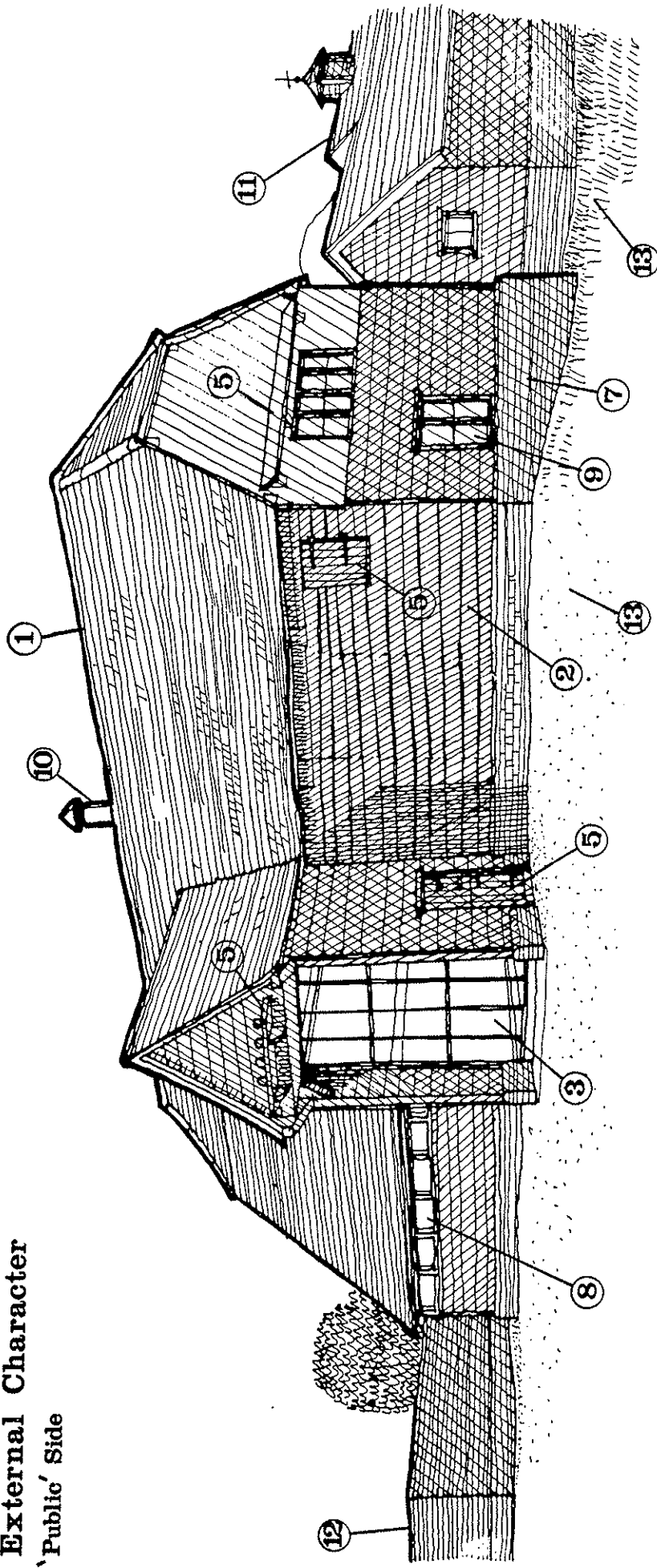
- 13.5 The treatment of driveways and pathways is also important and a matter to be decided from the outset. Generally speaking all such surfaces should be gravelled. Hard concrete kerb edging must be avoided and in no case should concrete paved patios or paths be incorporated. Such external areas might be surfaced in brick or cobbles.
- 13.6 In multi-occupational schemes where garden sub-divisions are required, separation should take the form of either 6' high brick walls or hedges planted against 3' high chainlink fencing. Interwoven or slatted fencing should never be used. Hedging plants should be indigenous varieties, evergreens are inappropriate.
- 14.0 BRICK AND FLINT BARN
- 14.1 These are relatively unusual but some distinguished examples exist in the County. These masonry structure barns are even more difficult to convert satisfactorily than timber framed buildings, this is because of the difficulty of disguising window openings. Features such as ventilation slits and original openings should be retained, either glazed or unobtrusively blocked. Conventional windows, where strictly necessary, should follow the design of any existing openings with arched heads or timber lintels as appropriate. As in all barn conversions a scatter of small openings is less apparent than fewer large openings. A group of lancet slits is another non-domestic element which may be employed in these circumstances to advantage. As the window openings will be apparent, even more care is required in avoiding emphasising the internal sub-division by the pattern of external openings.

Credits

This guidance document has been produced by members of the Historic Buildings and Conservation Section of the County Planning Department.

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External Character
 'Public' Side



- ① Original roof material retained.
- ② Original wall cladding; retained or renewed.
- ③ Full height glazing of midstorey opening.
- ④ Full height glazing of door opening with doors retained as external shutters.
- ⑤ Old external features retained where practicable.
- ⑥ Patent glazing in roof.
- ⑦ Brick plinths repaired and retained.
- ⑧ Horizontal strip window in lean-to.
- ⑨ Smaller windows concentrated in less conspicuous gable end.
- ⑩ Industrial type fine pipe
- ⑪ Garaging/utility room in old outbuildings.
- ⑫ Screen wall concealing clothes drying/oil tanks/patio etc.
- ⑬ Simple landscaping of graveled or grassed areas

'Private' Side

