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Conservation and Restoration Works in England: Conversion of Barns

Ekin ÜÇLER BİLMEZ[1], Can Mehmet HERSEK[2,*]

[1] *0000-0002-9747-4485, Başkent University, Department of Interior Architecture and Environmental Design, Ankara/Turkey*

[2] *0000-0002-7988-5061, Başkent University, Department of Interior Architecture and Environmental Design, Ankara/Turkey*

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Abstract

With a rich agricultural history, many barns in the United Kingdom have been facing neglect and abandonment in recent years. This study investigates the trends in the transformation of traditional barns into contemporary and usable structures in England. It evaluates the intersection between the preservation of architectural heritage and the needs of modern life.

The United Kingdom is one of the countries that have efforts to protect and preserve historic buildings. While it has signed various regulations and laws on the scale of the renovation of historical buildings, it has strong structures created through civil and official channels for the protection of the structures within the borders of its country. In addition, the framework of conservation efforts has been collected and documented by written sources. The country, which understands the importance of environmental and architectural heritage, hosts successful studies and practices on this matter. Interventions for barn structures with high potential on an interior scale are also within the scope of these studies.

This research focuses on six different barn transformation projects located in England. The basic approach to the evaluation of barn transformations is the degree of preservation, the old-new distinction, and the harmony between the structure and the new function. In this direction, evaluation tables created.

1. INTRODUCTION

In modern and civilized societies, it is considered a responsibility to preserve architecture that are considered cultural assets and have survived from the past to the present, and to pass them on to future generations. The preservation of historical artifacts has been a concern throughout history for various purposes and reasons. The decision to protect monuments, structures, and settlements is usually influenced by economic, social, and political conditions of the period, as well as religious and national sentiments. It is important to note that the monuments and structures deemed worthy of protection can change over time as societal conditions change.

Today, traditional architectural structures commonly found in rural areas have begun to lose their functions due to changing technology and production techniques in agricultural production and animal husbandry. Today, especially in developed Western European countries, village houses, huts, and barns are gradually losing their functions and becoming idle. The countries most affected by this situation are Germany, France, Belgium, and England. Among the countries in question, England, in particular, draws attention to its non-governmental organizations and advanced Conservation Laws and Legislation, as well as its conservation/re-functional efforts in this regard (Hersek, 2001)

At its core, barn conversion combines preservation and renewal. Due to their continuous interior space, barns allow for the adaptation of numerous functions. Integration of modern techniques and design principles preserves the historic features and character of these iconic buildings. Barn conversions should not be associated solely with the reclamation of spaces. These practices are directly related to the recovery of historical narratives, protection of agricultural heritage, and transfer of it to future generations by remaining in use.

* Corresponding author: hersek@baskent.edu.tr

METHOD

In the study, six examples of barn transformations were analyzed. All examples are located in England. Projects were accessed via the Internet. The primary source is the 'Archdaily' website. Along with it, websites of the architecture firms also had been used as reference. Archdaily describes itself as 'the world's most visited architecture website.' It includes various architectural projects of different types and scales in its large database. In addition, direct interviews with companies, designers, and project owners are also included on the site. While accessing the selected projects, the search is limited to the keywords 'barn conversion' and 'England.'

The evaluation was made through tables created in the context of three ICOMOS charters with the guide PPS 5: Planning for the Historic Environment created by the United Kingdom Government. These regulations are the Venice Charter (1964), the Charter of the Built Vernacular Heritage (1999), and the ICOMOS Charter – Principles of Analysis, Conservation, and Restoration of Architectural Heritage (2003).
Lighting elements and furniture are not included because the nature of barn structures does not contain furniture or lighting elements and in this case, their preservation status cannot be determined. The evaluation was made within the framework of structural elements, interior elements, old building-new extension separability, preservation of original materials, and new function-structure harmony.

3. LEGAL PRACTICES AND ORGANIZATIONS FOR CONSERVATION AND RESTORATION IN THE UNITED KINGDOM

Listed buildings in the UK are protected under the primary legislation. Within the scope of it, regulations named ‘The Planning Act’ or ‘Listed Building and Conservation Areas’ dated 1990 are considered to be the first source in terms of protection of listed buildings. Demolition of a listed building and any alterations or changes that impact the unique character of an architecturally or historically significant building require legal permissions (1990 Act, Section 7). The criterion for approval is ‘the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses’ (Sections 16 and 14 respectively and Article 85). Listed structures are ranked based on various factors, including rarity and completeness. Alterations for unlisted buildings on the preservation areas also need planning permission. In short, any intervention to historical buildings should proceed by informing local or national authorities, depending on the degree and importance of the building.
Applications for the protection of historic buildings in England are reviewed under the National Policy Framework (NPPF). Protecting heritage assets in accordance with their relevance so that they contribute to the quality of life of present and future generations is one of the NPPF's key goals. The draft offers instructions on how to apply for and receive the required permits for a listed structure. Furthermore, standards and design advice for remodeling and repair projects are included in the NPFF. The National Planning Practice Guidelines (NPPG) on the application of the Planning (Listed Buildings and Conservation Areas) Act 1990 supported the National Planning Policy Framework (NPPF), which took the place of all prior government policies on heritage protection in England in March 2012, including PPS5. However, advanced and detailed recommendations on the planning of the historic environment are given in the planning policy declaration called 'PPS5: Planning for the Historic Environment Guide'. Until a new guide release and replace PSS5, practice guide remains a valid and government endorsed document (Taylor, 2014).

Sections 5 and 6 of PPS5 highlight key points for interventions on heritage assets. Section 5 emphasizes the following practices for design, based on designing within a specific context:
1.The significance of nearby assets and the contribution of their setting.
2.The general character and distinctiveness of the local buildings, spaces, public realm and the landscape.
3.Landmarks and other features that are key to a sense of place.
4.The diversity or uniformity in style, construction, materials, detailing, decoration and period of existing buildings and spaces.
5.The topography.
6.Views into and from the site and its surroundings.

7.Green landscaping.
8.The current and historic uses in the area and the urban grain.

Table 1. *PPS5 Historic Environment Planning Practice Guide*

	PPS5 HISTORIC ENVIRONMENT PLANNING PRACTICE GUIDE SECTION 6. FURTHER GUIDANCE ON MAKING CHANGES TO HERITAGE ASSETS
REPAIR	*Original materials normally only need to be replaced when they have failed in their structural purpose. Repairing by re-using materials to match the original in substance, texture, quality and colour, helps maintain authenticity, ensures the repair is technically and visually compatible, minimises the use of new resources and reduces waste. *Even when undertaking repair, care is needed to maintain the integrity of the asset. *The removal of hard renders may cause more damage to the significance of the building than retention. *Doors and windows are frequently key to the significance of a building. Change is therefore advisable only where the original is beyond repair, it minimises the loss of historic fabric and matches the original in detail *Even the most minor repairs can sometimes have an impact on the archaeological interest of a heritage asset and may reveal new information relating to the significance of that asset. The recording of evidence revealed by such works may therefore be appropriate.
RESTORATION	*Restoration may range from small-scale work to reinstate missing elements of decoration, such as the reinstatement of sections of ornamental plasterwork to a known design, to large schemes to restore the former appearance of buildings with the addition of major missing elements such as a missing wing. Previous repairs may be historically important, and may provide useful information about the structure of the building, as will the recording of any features revealed by the work. New work can be distinguished by discreet dating or other subtle means. Overt methods of distinction, such as tooling of stonework, setting back a new face from the old, or other similar techniques, areunlikely to be sympathetic. *Restoration involving the stripping-off of later layers of work or abrasive cleaning is only likely to be acceptable where it can be shown that: 1.The later layers are not of significance in themselves. 2.They are damaging the original and other significant fabric. 3.By their removal there would be an enhancement to the significance of the building that outweighs the loss of the later addition. *Stripping off finishes such as plaster to expose rubble, brick or timber-framed walls never intended to be seen is likely to have an adverse effect on the building's significance through the loss of historic materials and original finishes and harm to the aesthetic. *Replacement of one material by another, for example on roofs, may result in a loss of significance and will in those cases need clear justification. Therefore, while the replacement of an inappropriate and non-original material is likely to be easily justified, more justification will be needed for changes from one type of thatch, slate or tile to another. *The reuse of original materials whenever possible will meet conservation and other sustainability objectives. *The legibility of names on war memorials is important and their re-cutting and/or re-painting in an appropriate manner are likely to be acceptable. For other inscriptions, conservation rather than restoration may be preferred, where the original script is significant. *If convincing evidence is available it may be appropriate to take opportunities to reinstate missing architectural details, such as balustrades and cornices or missing elements of a decorative scheme, using traditional methods and materials.
ADDITION AND ALTERATION	*When a building is adapted for new uses, its form as well as its external and internal features may impose constraints. Some degree of compromise in use may assist in retaining significance. *The plan form of a building is frequently one of its most important characteristics and internal partitions, staircases (whether decorated or plain, principal or secondary) and other features are likely to form part of its significance. Indeed they may be its most significant feature. Proposals to remove or modify internal arrangements, including the insertion of new openings or extension underground, will be subject to the same considerations of impact on significance (particularly architectural interest) as for externally visible alterations. *The sub-division of buildings, such as threshing barns and churches, that are significant for their open interiors, impressive proportions and long sight lines, may have a considerable impact on significance. In these circumstances the use of pods or other design devices that allow the entirety of the space to be read may be appropriate. *The introduction of new floors into a building or removal of historic floors and ceilings may have considerable impact on an asset's significance. Certain asset types, such as large industrial buildings, are generally more capable of accepting such changes without unacceptable loss of significance. *The insertion of new elements such as doors and windows, (including dormers and roof lights to bring roof spaces into more intensive use) is quite likely to adversely affect the building's significance. Harm might be avoided if roof lights are located on less prominent roof slopes. New elements may be more acceptable if account is taken of the character of the building, the roofline and significant fabric. *New features added to a building are less likely to have an impact on the significance if they follow the character of the building. Thus in a barn conversion new doors and windows are more likely to be acceptable if they are agricultural rather than domestic in character, with the relationship of new glazing to the wall plane reflecting that of the existing and, where large door openings are to be glazed, with the former doors retained or replicated so that they can be closed. *Small-scale features, inside and out, such as historic painting schemes,ornamental plasterwork, carpenters' and masons' marks, chimney breasts and stacks, inscriptions and signs, will frequently contribute strongly to a building's significance and removing or obscuring them is likely to affect the asset's significance. *Extant flooring materials will often be of interest in themselves. Additional care is needed on lower floors to ensure that archaeological interest below the finished surface is not adversely affected by proposed works. *Although some works of up-grading, such as new kitchens and bathroom units, are unlikely to need consent, new services, both internal and external can have a considerable, and often cumulative, effect on the appearance of a building and can affect significance. The impact of necessary services can be minimised by avoiding damage to decorative features by carefully routeing and finishing and by use of materials appropriate to the relevant period, such as cast iron for gutters and downpipes for many Georgian and Victorian buildings. * Where the proposal involves a change of use, particularly to single or multiple residential units, local planning authorities may consider that the impact on the building and its setting of potential future permitted development, such as conservatories, garden sheds and other structures associated with residential use, make the change of use proposal unacceptable in principle. Conditions preventing or limiting such future permitted development may make the change of use proposal acceptable. *Buildings will often have an important established and historic relationship with the landscaping that exists or used to exist around them. Proposals to alter or renew the landscaping are more likely to be acceptable if the design is based on a sound and wellresearched understanding of the building's relationship with its setting, both now and in the past.
WORKS FOR RESEARCH ALONE	*Any intrusive investigation may reduce the significance of an asset and impair the available resource for future archaeological investigation. It may also affect the historic and aesthetic values of the asset. *Metal-detecting on a scheduled monument for any reason requires a licence and intrusive investigation for research purposes will require scheduled monument consent.

Section 6 provides a guide for alterations to be made to heritage assets. Table 1 demonstrates the details of the guide. Although alterations divided into four main groups some assets might be in scope of more than one groups.
Additions and alterations to the outer shells of buildings require approval from local authorities. As for changes in the interior spaces, approval is only required for listed buildings. The protection of interior spaces is also subject to the 'Planning Act', supported by government policy and guidance. Regulations that do not require Listed Building approval include:

- Repairs that do not involve demolition or additions. Repairs must be limited to the required area. New material selections should be compatible with the existing ones. The entire process must photographed before and after and documented by taking detailed notes on what has been done. Since repairs also involve changes, local authorities should informed before repair work begins.

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For all works on historic buildings, it is essential to engage the services of professional consultants who specialize in the conservation of historic buildings, both to specify the works and to liaise with the local authority (Taylor, 2020). It is possible that the original texture of the building may be unintentionally damaged, or a technical problem may arise during the operations performed. It is crucial to work with experts to protect the harmony between the new additions and the old building.

The United Kingdom is actively involved in protecting historical buildings, both through non-governmental organizations and official organizations. Examples of non-governmental activities include English Heritage and National Trust, while the country has also signed the ICOMOS statutes on an international level. See more at www.english-heritage.org.uk and www.nationaltrust.org.uk about the works of English Heritage and the National Trust. For the official actions, ICOMOS charters signed by UK represent a great example of the country's perspective for the protection of historic buildings.

Table 2. *ICOMOS Charters Related to Building Protection*

	CHARTERS SIGNED BY THE UNITED KINGDOM ARTICLES DIRECTLY RELATED TO STRUCTURAL PROTECTION
VENICE CHARTER (1964)	**Article 5.** The conservation of monuments is always facilitated by making use of them for some socially useful purpose. Such use is therefore desirable but it must not change the lay-out or decoration of the building. It is within these limits only that modifications demanded by a change of function should be envisaged and may be permitted. **Article 6.** The conservation of monuments is always facilitated by making use of them for some socially useful purpose. Such use is therefore desirable but it must not change the lay-out or decoration of the building. It is within these limits only that modifications demanded by a change of function should be envisaged and may be permitted. **Article 9.** The process of restoration is a highly specialized operation. Its aim is to preserve and reveal the aesthetic and historic value of the monument and is based on respect for original material and authentic documents. It must stop at the point where conjecture begins, and in this case moreover any extra work which is indispensable must be distinct from the architectural composition and must bear a contemporary stamp. The restoration in any case must be preceded and followed by an archaeological and historical study of the monument. **Article 11.** The valid contributions of all periods to the building of a monument must be respected, since unity of style is not the aim of a restoration. When a building includes the superimposed work of different periods, the revealing of the underlying state can only be justified in exceptional circumstances and when what is removed is of little interest and the material which is brought to light is of great historical, archaeological or aesthetic value, and its state of preservation good enough to justify the action. Evaluation of the importance of the elements involved and the decision as to what may be destroyed cannot rest solely on the individual in charge of the work. **Article 12.** Replacements of missing parts must integrate harmoniously with the whole, but at the same time must be distinguishable from the original so that restoration does not falsify the artistic or historic evidence.
CHARTER ON THE BUILT VERNACULAR HERITAGE (1999)	**4. Replacement of materials and parts** Alterations which legitimately respond to the demands of contemporary use should be effected by the introduction of materials which maintain a consistency of expression, appearance, texture and form throughout the structure and a consistency of building materials. **5. Adaptation** Adaptation and reuse of vernacular structures should be carried out in a manner which will respect the integrity of the structure, its character and form while being compatible with acceptable standards of living. Where there is no break in the continuous utilisation of vernacular forms, a code of ethics within the community can serve as a tool of intervention. **6. Changes and period restoration** Changes over time should be appreciated and understood as important aspects of vernacular architecture. Conformity of all parts of a building to a single period, will not normally be the goal of work on vernacular structures.
ICOMOS CHARTER- PRINCIPLES FOR THE ANALYSIS, CONSERVATION AND STRUCTURAL RESTORATION OF ARCHITECTURAL HERITAGE (2003)	**3.3** The value of architectural heritage is not only in its appearance, but also in the integrity of all its components as a unique product of the specific building technology of its time. In particular the removal of the inner structures maintaining only the facades does not fit the conservation criteria. **3.9** Where possible, any measures adopted should be reversible so that they can be removed and replaced with more suitable measures when new knowledge is acquired. Where they are not completely reversible, interventions should not limit further interventions. **3.10** The characteristics of materials used in restoration work (in particular new materials) and their compatibility with existing materials should be fully established. This must include long-term impacts, so that undesirable side-effects are avoided. **3.11** The distinguishing qualities of the structure and its environment, in their original or earlier states, should not be destroyed. **3.12** Each intervention should, as far as possible, respect the concept, techniques and historical value of the original or earlier states of the structure and leaves evidence that can be recognised in the future. **3.14** The removal or alteration of any historic material or distinctive architectural features should be avoided whenever possible. **3.16** Imperfections and alterations, when they have become part of the history of the structure, should be maintained so far so they do not compromise the safety requirements.

Various resources used in the preservation and transformation of buildings are substantial for the effective protection of architectural heritage. The common purpose of all charters and directives is to protect and preserve the original identity of the existing historic building to a broad extent. By doing so, the protection and continuity of cultural and architectural diversity on a global scale is ensured.

4. BARN CONVERSIONS IN ENGLAND

Conservation of traditional architecture must be considered not only in big cities with their old quarters but also in small settlements like small agrarian or mountain villages with their surrounding landscape (Hersek, 2023). Therefore farmhouses, cottages, and barns are among the building types hold great potential for conservation practices. Vernacular architectural examples are the primary representatives of societies' cultures and daily life. Houses, huts, and some temples are temple typologies that reveal the understanding of local architecture. However, barn structures can also be included in the traditional

architecture class. Barns are textbook exapmles of vernacular architecture: they are utilitarian, timeless and, within a specific region, uniform. They are adjusted to meet the requirements of particular locations and functions (Kalakoski & Thorgrimsdottir, 2022). Therefore they are important sources for understanding communal and regional architectural identities.

Peters (1981) define barns as 'a building for housing and threshing the corn and pulse corpse'. Barns can be used for various purposes such as storing hay, tobacco, agricultural products, or providing space for livestock activities. Due to the diversity of functions, different types of barn structures have been classified. As an example, Francaviglia (1972) divided barn types into two main groups based on roof and hay hood types. On the other hand, Lawson (1991) grouped barn types according to their basic internal forms such as 'Cruck From, Open Form, and Aisled Form' (Figure 1).

It is possible to come across different application examples in the reuse of barn structures. Kalakoski & Thorgrimsdottir (2022) evaluated the different application strategies adopted in barn transformation in five groups in their study. These are: conversion, repurposing, relocation, reinterpretation and imagination (Figure 2). This division can be considered as a reference point in examining refunctional examples. The group in which structures will be classified may vary depending on the condition of the building, its size and the new function to be adopted during the transformation. The most holistic approach will be beneficial in achieving successful results in terms of reuse and protection.

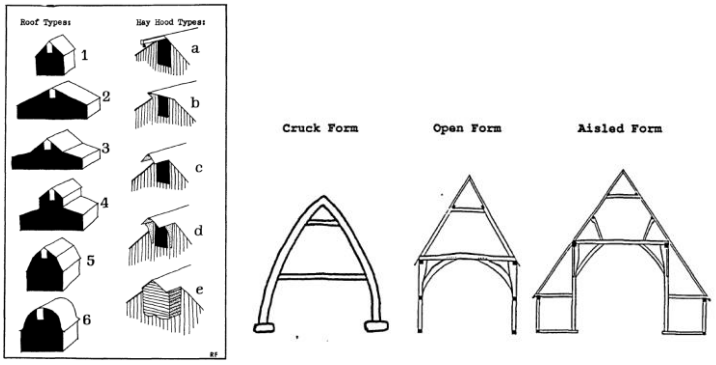

Figure 1. *Barn Types According to Outer shells & Internal Forms, [3]- [8]*

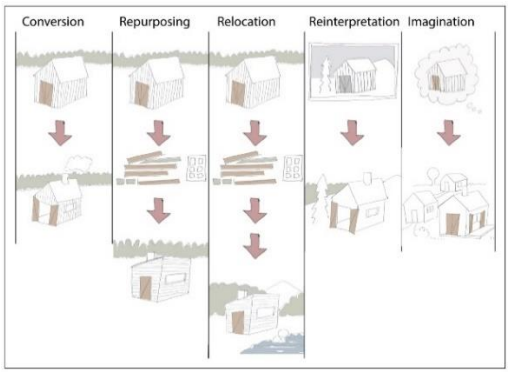

Figure 2. *Five Types of Architectural Responses to Barns, [7]*

Numerous agricultural structures are located in rural areas of England. Among these barns are one of the typologies subject to conservation, transformation, and re-functional practices. Changes to planning laws in 2014 mean you can convert a barn under permitted development rights. This government scheme allows certain projects to go through without the need for full planning permission, and in the case of a barn conversion, can be utilized to create up to five new residential dwellings. (Heather, 2023). After obtaining the necessary permissions, it is recommended that the process be carried out by a professional team.

A barn conversion is where you take an existing but disused barn and turn it into an office, new family home, holiday let, B&B, or even studio space for artists and photographers (Stephens, 2024). Barns provide ease of conversion to different functions compared to many building types, due to their wall-less interior partitions and ceiling heights. The six projects listed below are examples of the transformation of barn structures into different functions.

4.1. Redhill Barn

Redhill Barn built in 1810 and made of stone and located at South Devon, UK. The 199m2 retrofitted barn sits within a 25-acre site of green fields and is part of a wider long-term strategy, which is being developed by the clients and the practice, to regenerate and rewild the secluded site, turning an agricultural relic into the hub of a new ecological smallholding. The scheme creates a new kitchen garden, traditional orchard and series of wildflower meadows, interspersed with wild margins, hedge banks and areas of copse and scrub (ArchDaily, Redhill Barn/TYPE, 2021). As an example of agricultural engineering, the original building was designed as two floors, the lower floor for cattle and the upper floor for threshing storage. Built as part of a wealthy farm estate, the building fell into disrepair as it was isolated from other farm buildings and inaccessible by road. During the restoration process, no new openings were made to preserve the original facade and to restore its original light and space dynamics. A series of 'floating boxes' were installed throughout the interior, serving as the main rooms and allowing the barn to remain open and undivided (Figure 3). Arched pivot doors were also installed to allow for easy opening and closing of the large cattle openings. Contemporary floor and roof elements were designed to evoke the rhythm and simplicity found on the roofs of traditional agricultural buildings. The roof consists of small-section wood and steel connections, allowing the structure to sit higher than a traditional beam.

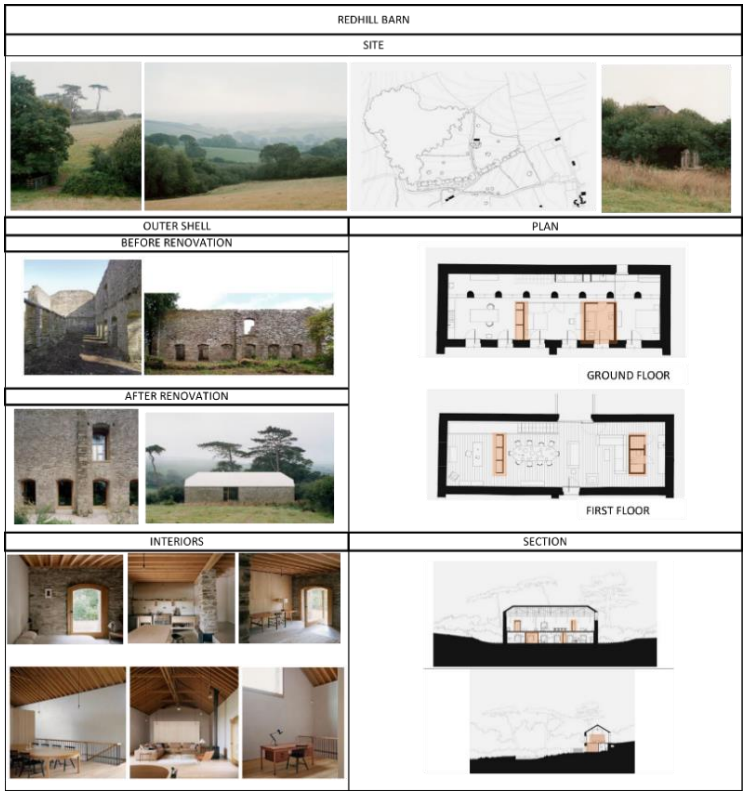

Figure 3. *Redhill Barn Visuals, [17]*

Various materials used to emphasize its structure, hierarchy, and history. The new construction is made of fir wood, while the original walls are built with stone and lime plaster. The boxes are covered with light sycamore cladding. The minimalist furniture blends with the interior's color scheme and function. The lighting fixtures follow a modern design.

4.2. Lake District Barn

A redundant stone barn and an adjoining agricultural shed transformed into a family home located in the Lake District National Park Cumbria, United Kingdom. Cumbria is a predominantly rural region. A family home in the Lake District National Park created from a redundant stone barn and an adjacent agricultural shed. The design uses regenerative design principles that minimise the use of extractive and high carbon materials, and instead uses natural materials which can be simply broken down, re-used or recycled without contaminating soils or taking up space in landfill, following cradle to cradle thinking (Type, 2021). The house has a well-preserved barn structure with thick stone walls that was converted into a living and dining area. Two new openings were introduced to frame views and improve the intake of daylight. The agricultural shed became a new wing with bedrooms and service areas (Figure 4).

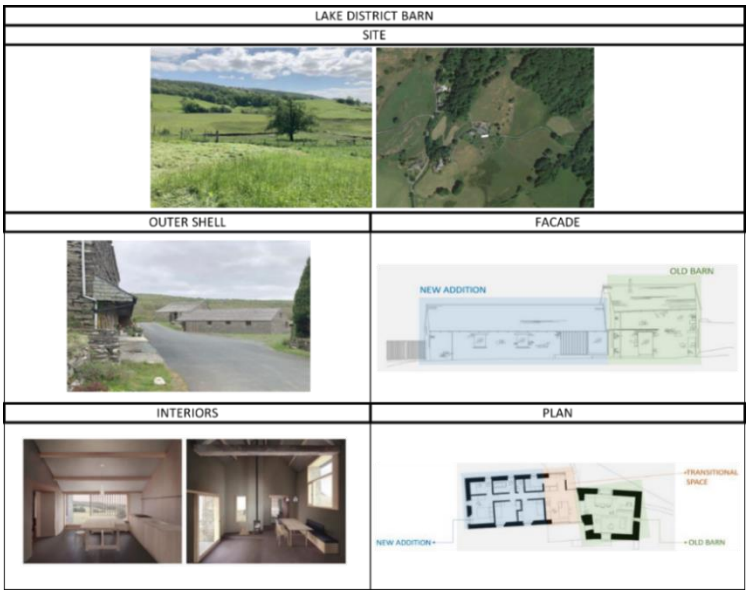

Figure4. *Lake District Barn Visuals, [18]*

The old barn and new wing are separated. The old structure was re-pointed while the new structure allows insects to colonize the facade. The kitchen forms a transparent connection with the old barn. The wooden furniture has simple lines and a lighter tone to contrast with dark colors on the floor and ceiling. Lighting elements have a plain and simple design.

4.3. Dutch Barn

The barn conversion project aimed to turn a functional agricultural building into a contemporary and spacious holiday home. Dutch Barn is located at Cotswolds, United Kingdom which is one of the largest protected landscapes in the country. The design celebrates the pure form and industrial qualities of the existing kit structure with an architectural intervention based on simplicity and minimalism that is carried through from the scale of the overall site, to the very smallest details (TurnerWorks, Dutch Barn, 2020). The outer shell was covered in matte black corrugated steel to add texture and rhythm to the building's 23-meter-tall elevation and curved roof.

The building features new openings that frame the surrounding landscape and has seven bedrooms, with six located upstairs to take advantage of the natural surroundings. Inside, the house is arranged on two floors (Figure 5). The ground floor layout is an open plan designed as a living space created for various activities. The vertical form of a double-story living space with a balcony on the upper floor is emphasized by a chimney and two-story glass.

Material used in the building include white walls and sliding doors complemented by fir wood, concrete, ceramic, and stainless steel elements. The furniture is predominantly fir with simple and clean lines and is designed as modules. Different types of elements are obtained by juxtaposing a single square module.

Lighting fixtures are predominantly white-colored and round-shaped, providing a simple contrast to the rectangular and angular appearance of the space.

Figure5. *Dutch Barn Visuals, [19], [20], [21]*

4.4. Ochre Barn

This barn conversion located at Walpole St. Peter, Norfolk, United Kingdom exemplifies the importance given to the preservation of the existing structure. Turner Works (2011) explains their interest on protection of the outer shell with these words on thier website ‘Having seen too many agricultural buildings destroyed by over-domestication, we were keen to leave the exterior of this old barn in tact whilst transforming the interior into a flexible living space’.

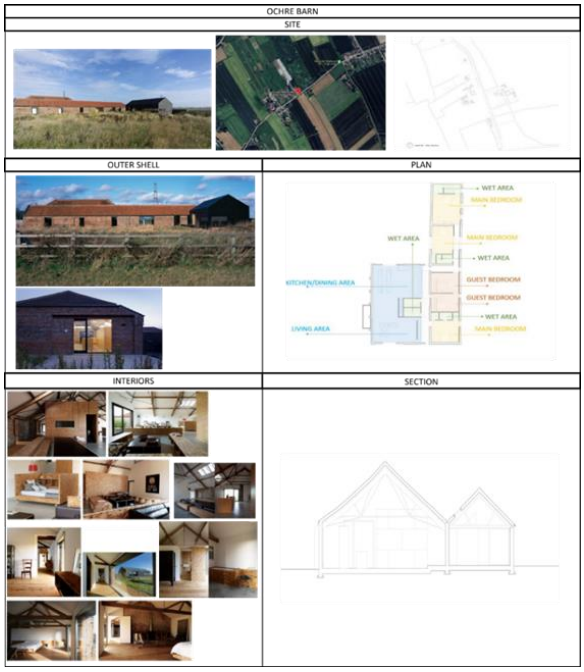

Figure6. *Ochre Barn Visuals, [22], [23], [24], [25]*

The building was originally a threshing barn and has two structures, one large and one small (Figure 6). To maximize space, furniture was designed to create space within the space. The kitchen units were detached from the wall to provide more space. Large-scale designs were preferred to provide different functions using the same furniture. Recycled materials were used throughout, with OSB plates being the most preferred. The white walls dominate the interior, but there is a noticeable brick wall in the master bedroom, which continues after the white parapet in the children's room.

4.5. Ancient Party Barn

The project is the original transformation of an 18th century barn structure. It is located at Folkstone, Kent, United Kingdom. The design brings a different approach to barn conversion projects by creating hermetic, introverted spaces located in 2,295 m² of open countryside. A series of industrial mechanisms fold and rotate the facades to provide expansive views of the landscape. They provide protection and security when closed. This high-tech kinetic mechanism does not damage the texture and character of the existing handmade wooden structure. One of the central spatial challenges was insertion of a mezzanine (for sleeping and bathing) into the main volume. A tapering brick chimney supports the corner of the mezzanine, and incorporates a cantilevered, waxed steel staircase and an open fireplace. This hybrid device interrupts the regularity of the three-bayed barn and delineates the different programmes within (ArchDaily, The Ancient Party Barn / Liddicoat & Goldhill, 2016).The kitchen is comprised of newly produced and recycled furniture. A small closure made of steel scissors at the top of the cabinets creates space for the storage unit. There is a small kitchen unit in the living area at the other end of the barn. Next to this unit, there is a furnace with a copper chimney (Figure 7).

Wooden beams and posts of the original building are preserved throughout the place. This practice continues in the bedroom as well. There is a wide range of material selection. A wide variety of materials such as parquet, concrete, wood cladding, paint, steel, and brick are used in the interior. Furniture selection is eclectic. Furniture and objects from many different periods are located in the same space. There is a more consistent choice of lighting elements. White, enamel lighting elements were used in the living area. In the bedroom, an antiqued glass fixture was preferred.

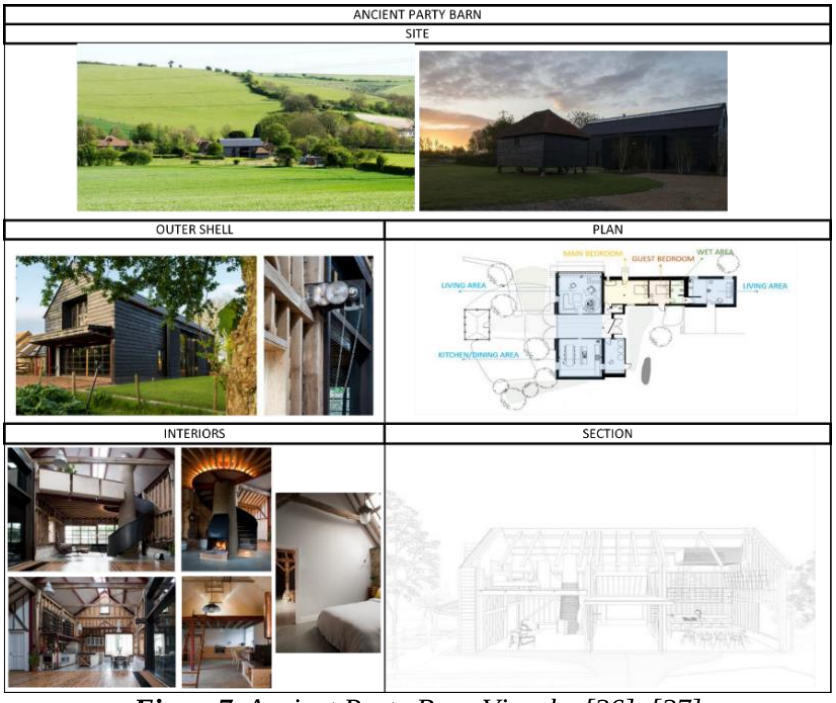

Figure7. *Ancient Party Barn Visuals, [26], [27]*

4.6. Christ Church Visitor's Centre

Christ Church College, Oxford, has requested that the historic thatched barn in Christ Church Meadows converted into a visiting centre. The center includes a shop and café. With the transformation, the barn gained a new function and the Priest House, which was previously used as a tourist shop, was restored. The Christ Church campus is situated adjacent to a meadow that is home to longhorn cattle and is classified as a Grade 1 listed area. Purcell (2020) defines their conservation strategy in the project as 'We simultaneously developed a design to extend the thatched barn in a way that eloquently integrated it within its historic context. Extensive consultation with stakeholders, Historic England and the local council informed the final proposals'.

Figure8. *Christ Church Visitor Centre [28], [29], [30]*

Within the meadow, there is a 19th-century thatched barn which was previously used as a store by the facilities department for many years. The barn's structure has been extensively modified, with two large additions added to provide adequate space for a ticket office, shop, seminar room, and other visitor facilities. Furthermore, new work areas have been designed for maintenance and gardening activities, which are located right next to the visitor center (Figure 8). By using traditional building materials such as wood, thatch, slate and stone, the new additions were made to blend in with their surroundings. The orientation of the additions has been adjusted to help frame the view of the surrouning meadow and Christ Church.

Considering the renovation status of six buildings, it is imperative to examine the relationship between 'old' and 'new.' While the features described as old characterize the original and genuine parts of the building, the parts described as new represent the parts added to the structure later. There are two perspectives to consider when evaluating the relationship between something old and something new in a given context: The separability of the old building and the additions and the harmonization of the relationship between the new function assigned to the old structure and the building's intrinsic potential.
For measuring the separability degree of old buildings and new additions, all the elements that were later brought to the building on the scale of interior and exterior spaces were examined. In this evaluation, while there is an equal grouping on the interiors, the outer shell is considered to present mostly successful protection (Table 3). Dutch Barn, the interior and exterior shell have been completely renewed, so there is no trace of the old; Lake District Barn, on the other hand, can be classified as less successful compared to other examples, as it gives the impression that the interior spaces have been completely renewed. Ochre

Barn and Ancient Party Barn are considered to be successful examples that preserve the original texture in the interior to a high extent, allowing all the elements added later to stand out. Redhill and Christ Church, on the other hand, show separation on a spatial scale rather than a holistic one.

Table 3. *Separability of Old Building and New Additions*

	SEPARABILITY OF OLD BUILDING AND NEW ADDITIONS					
BUILDING	INTERIOR SPACES			OUTER SHELL		
REDHILL BARN						
LAKE DISTRICT BARN						
DUTCH BARN						
OCHRE BARN						
ANCIENT PARTY BARN						
CHRIST CHURCH VISITOR'S CENTRE						

KEY:	COMPLETELY RENEWED	PARTIALLY INTERVENED	ORIGINAL

The evaluation of the old structure and new function compatibility was assessed under three groups. These are:

1. **Compatible:** The original characteristics of the structural elements are preserved, the original characteristics of the interior elements are preserved, and the characteristics of the original materials are preserved.
2. **Partially Compatible:** The original characteristics of most of the structural elements, interior elements and original materials have been preserved, but some elements have been renewed in accordance with their original structure.
3. **Incompatible:** Divided and identified as having lost the original characteristics of the majority of its structural elements, interior elements and original materials or having undergone incompatible renovation interventions.

In line with this evaluation, it is thought that the compatibility between the new function and structure is generally handled successfully, that is, in a harmonious manner (Table 4). While Rehdill Barn, Dutch Barn, Ochre Barn, and Ancient Party Barn are considered examples where structure and function are compatible with each other, Lake District Barn and Christ Church Visitor's Center are considered partially compatible due to some losses within the structure. The evaluation criterion used here is that if the function is suitable, there will be no loss in the structure.

Table 4. *New Function – Old Building Compatibility*

BUILDING	NEW FUNCTION - OLD BUILDING COMPATIBILITY
REDHILL BARN	
LAKE DISTRICT BARN	
DUCTH BARN	
OCHRE BARN	
ANCIENT PARTY BARN	
CHRIST CHURCH VISITOR'S CENTRE	

KEY:	COMPATIBLE	PARTIALLY COMPATIBLE	INCOMPATIBLE

5. CONCLUSION

The six projects examined are examples of the transformation of barn structures at different scales with different approaches. The main purpose of transformation is; The aim is to preserve the barn and keep it in use, thus ensuring the cultural transfer of a unique building typology to society. In this regard, the structures' compliance with the conservation criteria listed in PPS5, the Venice Charter, the Built Vernacular Heritage Regulation, and the Regulation on the Analysis, Protection, and Structural Restoration of Architectural Heritage were evaluated in different categories. It should be emphasized that when the evaluation criteria change, the result to be achieved may also change.

In the evaluations made, lighting elements and furniture were not included because the nature of barn structures does not contain furniture or lighting elements and in this case, their preservation status cannot be determined. This evaluation appraised under three different groups:

1. **Completely Renewed:** It refers to units that have been completely changed and defined with new materials.
2. **Partially Intervened:** It represents original textures and units that remain in use through addition or repair.
3. **Original:** It refers to the original textures and units that have not undergone any intervention.

In terms of preservation of structural elements, five buildings were evaluated as fully preserved; Redhill Barn is classified as partially preserved (Table 5). This is because Redhill's roof collapsed completely and therefore a new roof was added. The preservation of the original identities of the structural elements for all six barns is considered successful.

The preservation of the original identity of the interior elements is considered to be less successful than the building envelope (Table 6). It can be stated that this situation is affected by the fact that the barns do not have a rich infrastructure in terms of interior partitioning. Many barns do not have horizontal and vertical partitions. On an indoor scale, their most characteristic features are their length and roof structure. However, the floors of all barns appear to be covered with different materials. In this case, it can be stated that the original ground is not protected. In the evaluation, Dutch Barn was classified as having completely lost its original identity. While covering the building envelope with black corrugated metal prevents obtaining information about the original building materials, the interior has been completely renewed with contemporary coatings. For this barn, not even the rafters are visible.

Table 5. *Preservation Status of Original Elements*

	PRESERVATION STATUS OF ORIGINAL CONSTRUCTIONAL ELEMENTS		
BUILDING	**OPENINGS (DOOR, WINDOW)**	**ROOF**	**EXTERIOR WALLS**
REDHILL BARN			
LAKE DISTRICT BARN			
DUTCH BARN			
OCHRE BARN			
ANCIENT PARTY BARN			
CHRIST CHURCH VISITOR'S CENTRE			

KEY:	COMPLETELY RENEWED	PARTIALLY INTERVENED	ORIGINAL

Table 6. *Preservation Status of Original Interior Elements*

	PRESERVATION STATUS OF ORIGINAL INTERIOR ELEMENTS			
BUILDING	**FLOOR**	**CEILING**	**WALLS**	**WOODWORKS**
REDHILL BARN				
LAKE DISTRICT BARN				
DUTCH BARN				
OCHRE BARN				
ANCIENT PARTY BARN				
CHRIST CHURCH VISITOR'S CENTRE				

KEY:	COMPLETELY RENEWED	PARTIALLY INTERVENED	ORIGINAL

While an equal distribution is noted in the preservation of original materials at the outer shell scale, partial preservation is more common in the interior (Table 7). The existence of the original texture on a spatial scale was evaluated in the buildings considered to have been intervened. For example, leaving one wall in the bedroom completely belonging to the barn, but arranging the other walls with new materials can be considered an approach that falls into the intervened category. In this category, Dutch Barn and Lake District in particular were evaluated as unsuccessful because they covered all the original materials on both the inner and outer shell scale. Ancient Party Barn, on the other hand, was evaluated as successful with its features such as leaving even the beams exposed in protecting the interior materials.

The preservation of the form of the original building was evaluated at the scale of the interior spaces and outer shell. Evaluation of the interior was made in terms of perceiving the volume and ceiling height of the original building. In the outer shell, whether or not an add-on was introduced and the texture change made by adding new material to the shell was taken into consideration (Table 8).

Table 7. *Preservation Status of Original Materials*

	PRESERVATION STATUS OF ORIGINAL MATERIALS					
BUILDING	**INTERIOR SPACES**			**OUTER SHELL**		
REDHILL BARN						
LAKE DISTRICT BARN						
DUTCH BARN						
OCHRE BARN						
ANCIENT PARTY BARN						
CHRIST CHURCH VISITOR'S CENTRE						

KEY:	COMPLETELY RENEWED	PARTIALLY INTERVENED	ORIGINAL

The evaluation criterion for the structures grouped as partially preserved on an interior scale is the interruption of the original volumes of the barn structures by adding horizontal or vertical extensions. Since it is inevitable to make these divisions in line with new functions, all the structures examined were considered partially preserved in terms of preserving the internal spatial form and size. However, it should be emphasized that the degrees of internal partitioning in buildings are different. Ancient Party Barn, Christ Church Visitor's Centre and Redhill has more seamless interior spaces in terms of dimension compared to the Lake District, Dutch and Ochre Barn.

Table 8. *Preservation Status of Form and Size of the Original Building*

	PRESERVATION STATUS OF FORM AND SIZE OF THE ORIGINAL BUILDING					
BUILDING	**INTERIOR SPACES**			**OUTER SHELL**		
REDHILL BARN						
LAKE DISTRICT BARN						
DUTCH BARN						
OCHRE BARN						
ANCIENT PARTY BARN						
CHRIST CHURCH VISITOR'S CENTRE						

LEJANT:	ORIGINAL	PARTIALLY INTERVENED	COMPLETELY RENEWED

While ensuring that the unique identity of a building is preserved and remains in use, interventions should be limited to a certain extent. From a general perspective, the practices that are considered correct and the manners that are more appropriate to avoid are listed as follows, taking into account the PPS5, Venice Charter, the Charter of the Built Vernacular Heritage and the ICOMOS Charter – Principles of Analysis, Conservation, and Restoration of Architectural Heritage of the buildings that constitute the evaluation criteria in the study (Table 9).

Table 9. *Intervention Types as per Charters*

INTERVENTION TYPES AS PER CHARTERS	
ACCEPTABLE INTERVENTIONS	**UNACCEPTABLE INTERVENTIONS**
Renovation by Preserving the Mass and Color Relationship	Intervantions to Change Mass and Color Relationships
Readible and Separable New Additions	Usage of New Elements Exactly Same wit the Old Fabric of the Building
New Function Selection Compatible with the Original Structure	New Function Selection Non-Compatible with the Original Structure
Adopting a Modern Approach Instead fo Unity of Style	Acting with Concern for Unity of Style
Interventions with Reversible Approaches	Interventions with Non-Reversible Approaches
Preserving and Considering the Patina of the Building	Applications Not Respect the Patina of the Structure
Highlighting Distinctive Architectural and Historical Features	Not Highlighting Distinctive Architectural and Historical Features

It is important to limit interventions to a building according to an acceptable list to avoid causing more harm than good to the structure. When making changes to the building, care should be taken to maintain its original texture. For instance, partitions created within the building should not disrupt its spatial volume, and any new materials used should be appropriate to the building's original language. The materials should also be selected in a way that emphasizes that they were added later.

On a broader perspective assesment of the structures can be grouped under two headings: barns can be considered successful in terms of conservation principles and barns can be considered successful in terms of functional changes. Among all the case examples in the study, the applications that are considered successful are the conversion projects that approach the original identity with the most respectful attitude

and the least intervention, both on the outer shell and on the interior scale. While the barns that can be examined successful by conservation principles can be listed as Ancient Party Barn, Ochre Barn, and Redhill Barn, the most successful example in terms of functional application are regarded as Ancient Party Barn and Christ Church Visitor's Centre. The only building that stood out in both categories was the Ancient Party Barn. Thus, it is possible to consider the Ancient Party Barn as the most successful structure in this study. Because new materials and technologies were integrated into an old structure in a compatible and separable manner. Also, the design achieved harmony in the co-existence of the new and the old, while successfully distinguishing them from each other. The Ancient Party Barn had the highest preservation rate of its original identity among the six buildings examined.

Conservation efforts are valuable for buildings of all sizes, especially vernacular structures that represent the architectural and cultural understanding of societies. This study can serve as a reference for future practices in the protection of huts, houses, or agricultural structures, which are considered to have low conservation value compared to large palace or mansion-type buildings.

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