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# Cliff-side caverns: former and contemporary uses in Dordogne

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**Abstract**

The purpose of this paper is to demonstrate that the caverns and the subterranean spaces entered from the cliffs bordering the rivers of Dordogne are a valuable sustainable resource which should not be wasted. Almost entirely originally stone quarries, they are profitably used today for all kinds of purposes such as shops, restaurants, garages, workshops etc. They also form part of an environmental heritage from both the historical and architectural points of view. Together with the sheltering limestone cliffs, they are part of the intrinsic character of the Dordogne, and of the roots of human occupation of this region, known as 'the country of Man' (*'le pays de l'Homme'*).

*Key words: Cave dwellings, land use, conservation, Dordogne*

**Acknowledgement**

This brief paper results from the author's doctoral thesis at the Université de Bordeaux (Edge, 2011).

# Cliff-side caverns: former and contemporary uses in Dordogne

## An example of conservation and sustainability

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### Introduction

This paper uses the term 'cavern' to denote only a cavern in the side of a cliff – in the Dordogne usually a limestone cliff, at ground level or above. A number of those occupied today are of natural formation, although they may have been enlarged for occupation; but the majority were formerly quarries for building stone. This is the same type of limestone quarried for building uses in England at Bath and in the Cotswolds.

This oolitic limestone is a sedimentary rock normally found in the Dordogne in virtually horizontal beds, exposed in riverside cliffs. Owners are able to excavate with relative ease horizontally, deep into the cliffs, to extract blocks of building stone of one or two cubic metres. When the stone extraction ceases, the spaces thus created are normally of a useful human scale. However, only the outer part of an original quarry close to the cliff face is normally used (Figure 1). In the case of Brantôme Abbey, for example, its original quarry extended deep into the cliff face and, at one time, this additional space was used for mushroom cultivation. Such subterranean spaces are now used in south-west France for wine storage.

### Contemporary sustainable use of caverns

As in other parts of France and other countries, the occupation of cliff-side caverns and other subterranean spaces has lasted for thousands of years. They were the original, permanent human habitations in Dordogne, but today they have begun to be used for several different commercial purposes, and only a small number are now occupied as homes.

The use of former cliff-side limestone quarries as a valuable internal space has many advantages. They are situated at ground level and therefore access is easy, while the provision of drainage and other necessary services is not difficult. The work of converting these spaces for occupation is not costly and it is only necessary to construct a front wall or façade. The interior of these spaces remains at a stable temperature, due to the thermal inertia of the surrounding rock. If the space used extends deep into the cliff, humidity can be a problem, and mechanical ventilation and/or dehumidification will be needed. However, the interior is normally easily ventilated (Figure 2). Of course, natural lighting is always limited by their being only one external wall. Otherwise the consumption of energy is normally low, both for the work of fitting

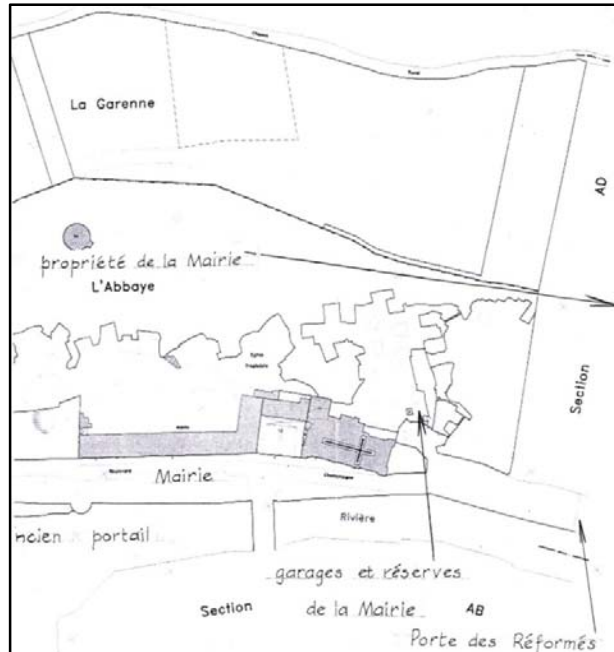


Figure 1. Brantôme Abbey showing buildings (shaded) fronting cavern space (provided by La Mairie, Brantôme).

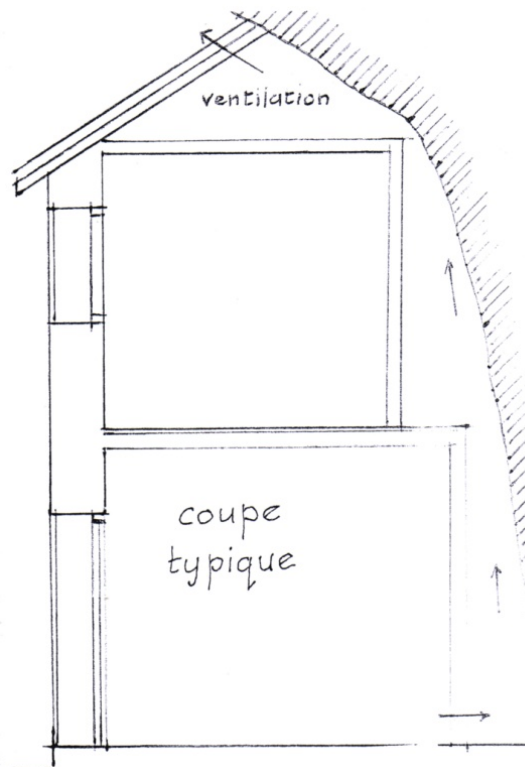


Figure 2. Les Giroutaux, Les Eyzies. Ventilation of structure built within a cave (photograph and drawing by the author).



them out and for their subsequent occupation. Additionally, the profitable use of these spaces may extend far into the future.

### **A natural, organic architecture at a human scale**

This environmental factor is obviously significant in the improvement and occupation of cliff-side caverns, but what of 'natural' architecture? The American architect Frank Lloyd Wright gives a philosophical answer (relating to his famous project Fallingwater: Toker, 2003), but not a description of certain buildings. He notes that it is an organic architecture, which shows a close link between architecture and nature. Essentially, therefore, it is a rural architecture, not one of the town – vernacular, not 'polite' – and its background environment is the countryside and the building materials that it provides. Consequently it is an architecture which springs from the earth itself, and in the case of the development of these cavern spaces, the limestone cliff itself is the background.

The cliff face with its strata, and the caves themselves, demonstrate a visual whole, by their colour and surface texture. Those which are developed and occupied show only a façade, which can be harmoniously designed and constructed of natural materials of good quality. Only the constructed façade is seen, but the choice of materials is important. The former cliff-face quarries at Brantôme (Figure 3) have been occupied for various commercial uses, and their façades, using natural, harmonious materials, provide good examples of a natural, organic architecture.

This developed cliff-face, with a length of at least a kilometre, is part of a protected heritage area, managed by the architect for the historic buildings of France (*l'Architecte des Bâtiments de France*). The shops, wine stores and restaurants in the cliff face are thronged with visitors during the tourist season, which in Brantôme extends to six months of the year.

However, an organic, natural architecture must always be built to the human scale. It has already been suggested that the construction materials should be of natural origin, such as the stone of the region, its timber, and the chalk used for mortar and rendered finishes – but the human scale is an equally important factor. The mouldings and details of the constructed façade of an occupied cavern, with their visible craftsmanship, clearly portray the human scale, and the descriptive term 'organic' also logically applies. A good example of this vernacular architecture can be seen at St Cirq, near Les Eyzies (Figure 4). This semi-troglodytic house with its roofing of stone slabs seems to grow from the cliff face. It now forms part of a museum. A further, perfect example of an organic, natural architecture is found in the Chapel of Caudon, near Domme (Figure 5). This chapel has been used up to the present by the owning family to celebrate marriages. The natural lighting from the windows is good, and with a belfry constructed on the rock above, and the surrounding natural environment, this monolithic church remains an ideal space for worship. Its origin is as a natural cavern in the cliff, further excavated and finished internally by stone-masons to provide a parish church. Unfortunately the property owners have been compelled to close it to the general public, because of abuse of

the interior by, it is believed, holiday-makers from the nearby campsite. Nevertheless, the Chapel of Caudon is open to the public on annual national heritage days.

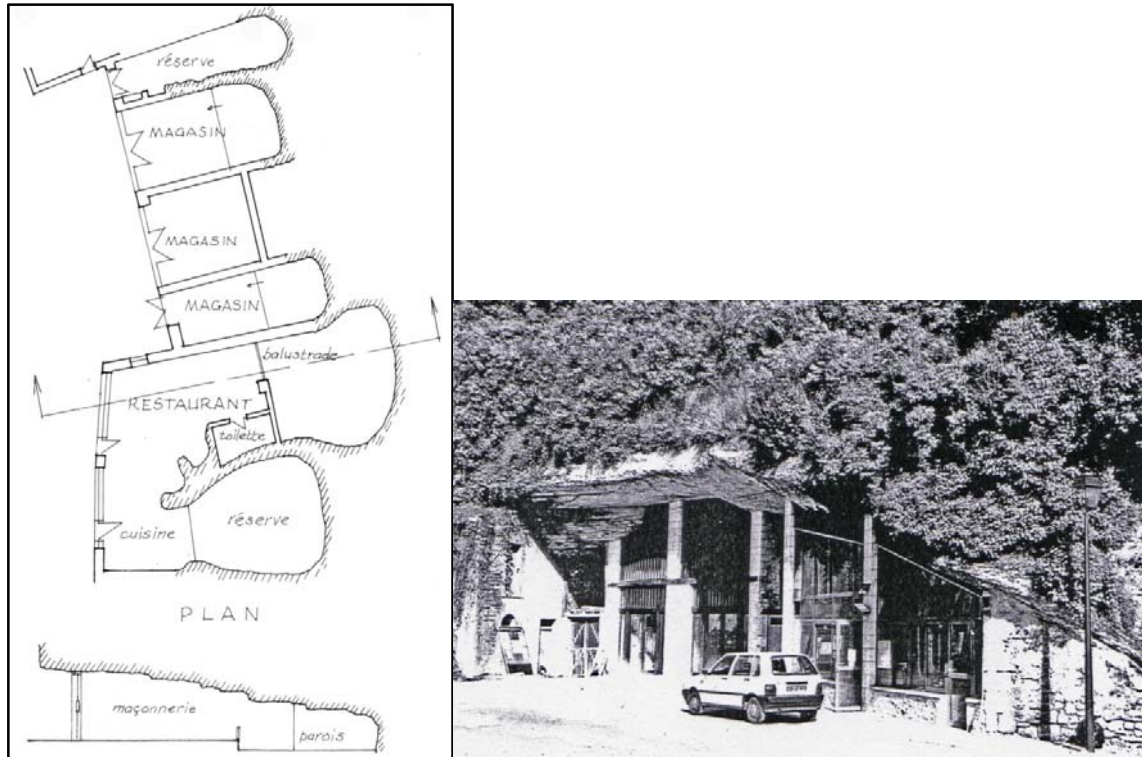


Figure 3. Brantôme: shops and restaurant in former quarry (photographed and drawn by the author).

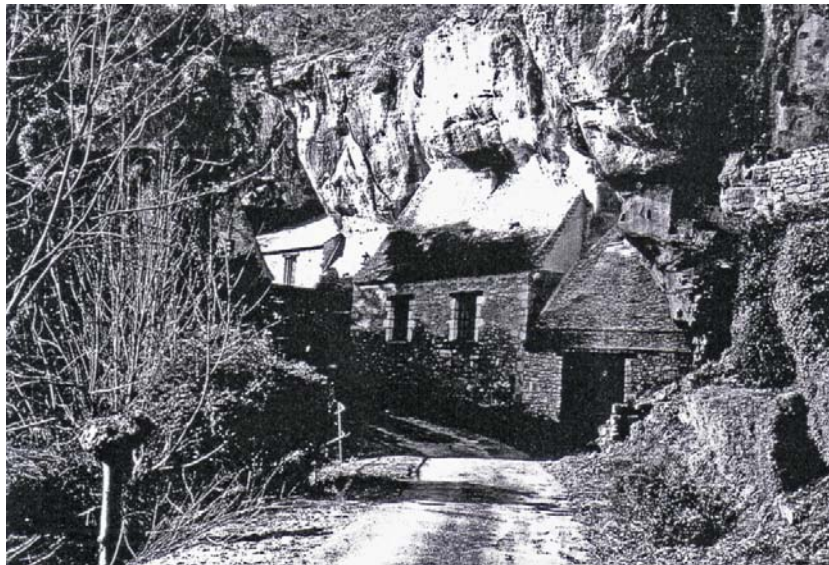


Figure 4. St Cirq: house and associated facilities built into cliff (photograph by the author).

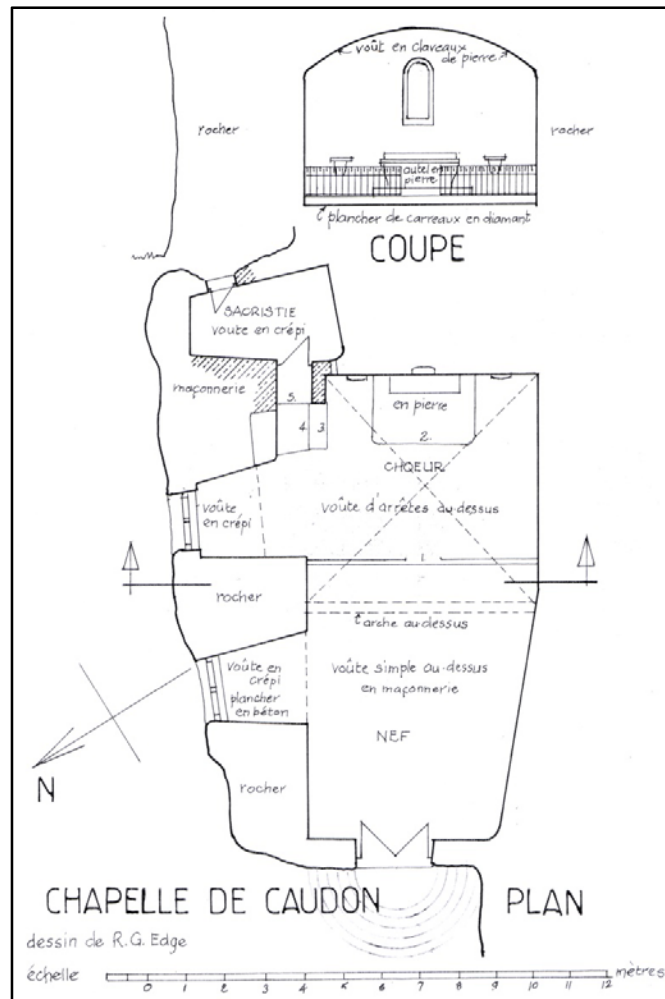


Figure 5. The Chapelle de Caudon (photographed and drawn by the author).



A commercial use of a former quarry can be seen at Vézac, the office of a timber merchant with a garage alongside (Figure 6). Surrounded by natural vegetation, this provides an example of organic architecture which is nevertheless unspoiled by the use of large sheets of plate glass on its façade.

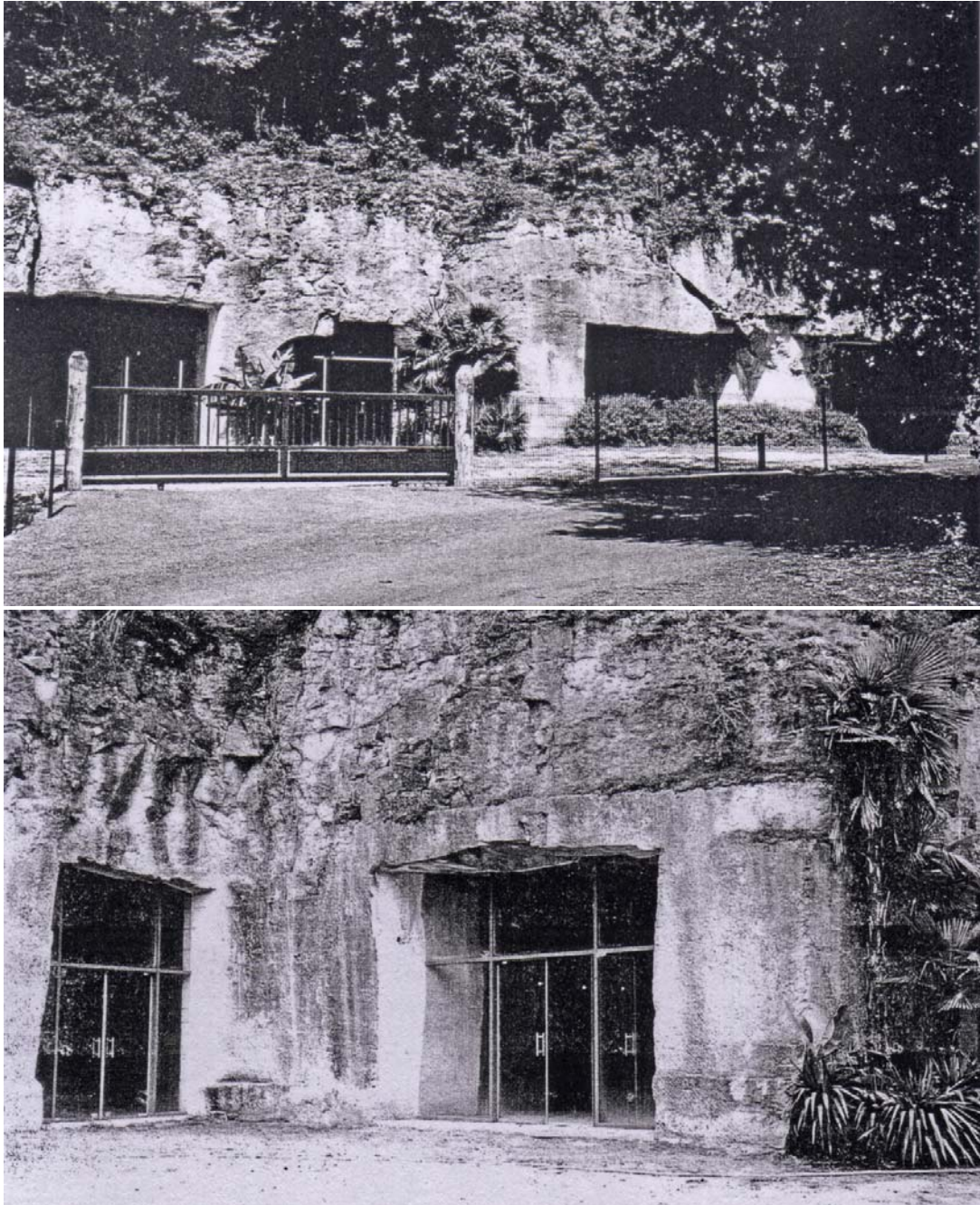


Figure 6. Vézac, commercial use of former quarry (photographs by the author).

Another interesting example of a natural architecture can be seen at Domme, formerly the office of an estate agent. This space originated as a natural cavern, formed at a very high level in the cliff face, with an extensive view to the valley of the river Dordogne. The owner is now in the process of refurbishing the interior, to provide a shop for the sale of fossil stones. When the work is finished, the shop, with its rock-faced interior, will be very suitable for its intended use, particularly because of its situation close to the grotto of Domme, itself a tourist attraction.

Traditional masonry is closely linked to cliff-side caverns, and these elements form an environmental factor in the distinctive character of the Dordogne *département*.

### **Heritage conservation**

The overhanging cliff shelters and the caverns in them were the first permanent homes for Dordogne's early inhabitants. The natural caverns had been further excavated for occupation and now remain as visible testimony to the long history of human habitation. For this reason, Dordogne has 15 UNESCO World Heritage Sites. The administrative centre of this area in the east of the *département* is the International Centre for Prehistory (le Pôle International de la Préhistoire), established in Les Eyzies de Tayac, together with a research centre, the National Museum of Prehistory (le Musée International de la Préhistoire). It is formally proposed that this area, of about 1,200 km<sup>2</sup>, should be declared one of France's major sites for conservation. The Dordogne *département* is exceptionally rich in national heritage, and has more historic monuments than any other *département*, being second only to Paris.

While the French dictionary definition (*le Petit Robert*) of heritage is the sum total of all the good things that we inherit from the past, a British statement is that a country without a visible, preserved heritage is like a man without a memory (attributed to Konrad Smigielski, Leicester's Planning Officer in the 1960s: Parfett and Power, 1997, p. 48). Thus there are numerous reasons to protect and make full use of the heritage, and the cliff-face caverns are certainly elements in the environment which are inherited from past generations.

### **Tourist attractions**

Those caverns used as museums attract great numbers of visitors during the tourist season and, together with other contemporary commercial uses, form an important part of Dordogne's economy. For example at Brantôme, the Place Charles de Gaulle and the Boulevard Charlemagne are thronged with visitors who are intrigued to see these cliff spaces used, as this is a very rare sight in other European countries. The shops, wine stores and restaurants also include a glass-blower's workshop, where the craftsman at work is visible through the window.

The Maison Forte de Reignac (Figures 7 and 8), in the Vézère valley near Le Moustier, is furnished as a tourist attraction: a vast medieval *château* high in the cliff. This is a unique site,



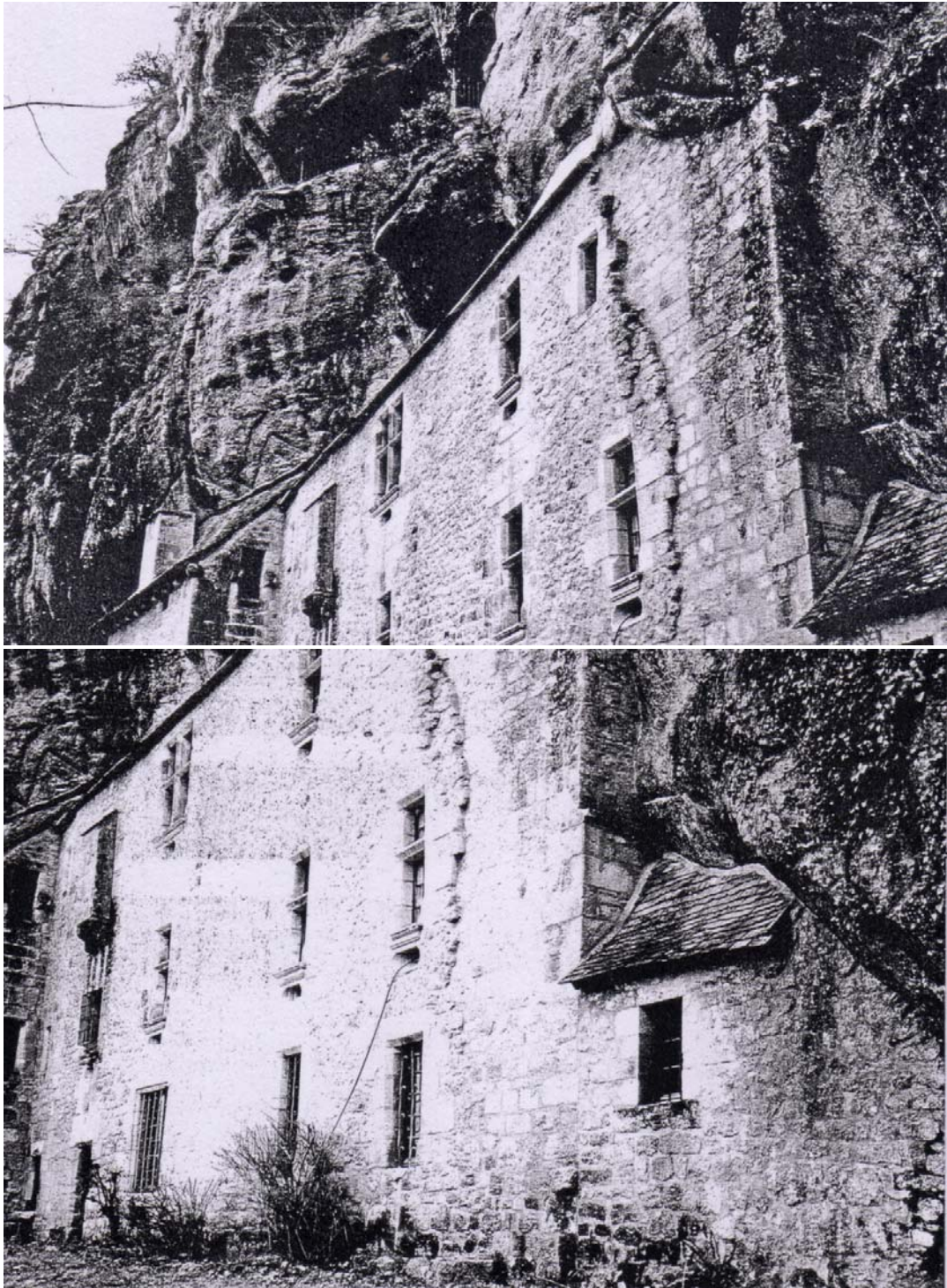


Figure 7. Maison Forte de Reignac, in the Vézère valley near Le Moustier (photograph by the author).

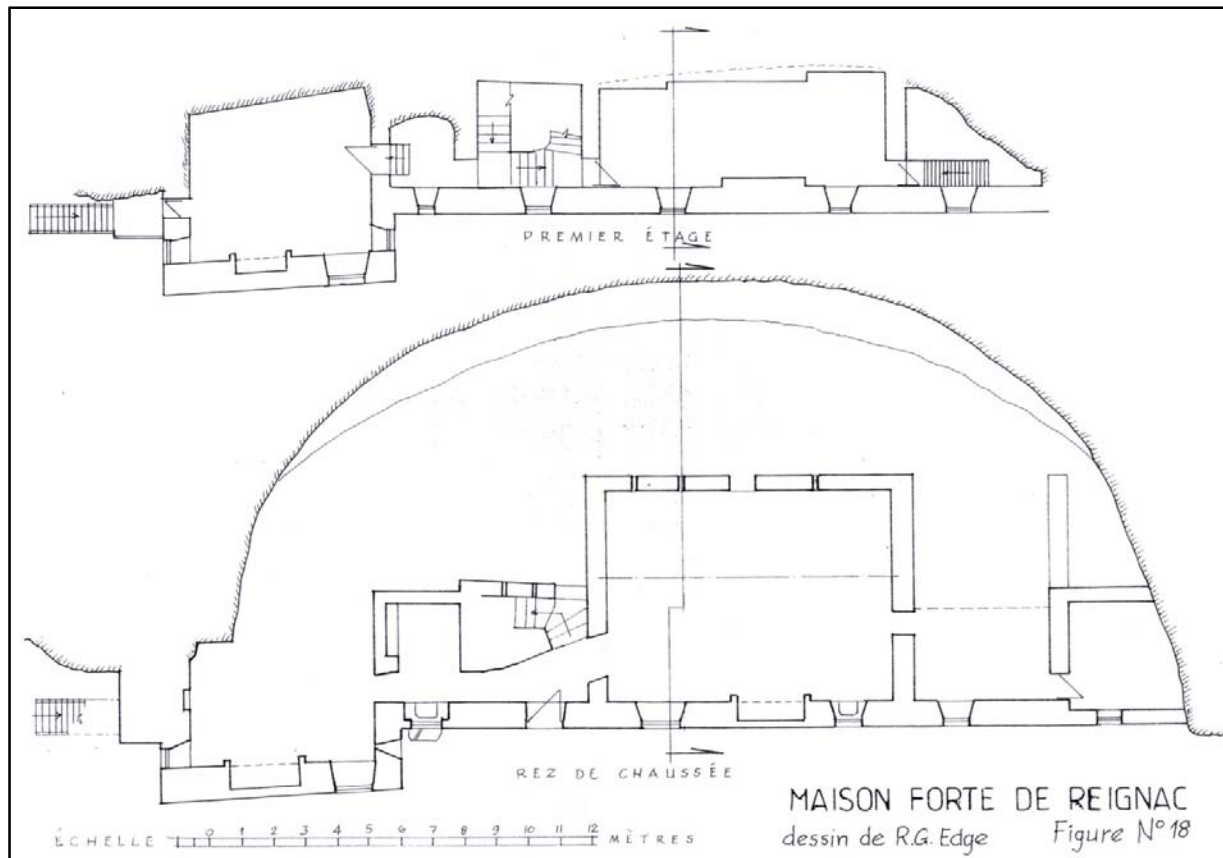


Figure 8. Maison Forte de Reignac (drawn by the author).

impregnable owing to its cliff-face location. It is also provided with a deep silo for grain storage, carved into the rock. Another museum, the Roc de Cazelle (Figure 9), is situated in the same area. It is a series of caverns and connecting passages in the cliff-face of the river Beune, a tributary of the Vézère. It also includes a very small troglodytic house which was inhabited until the 1960s, now furnished in the style typical of the Second World War period.

The museum at St Pardoux de Mareuil (Figure 10) illustrates life during the Bronze and Iron Ages. This series of small caverns in the cliff-face of the river Belle, accessed by footpath across fields, is of great archaeological interest. Examples of many different uses of those periods can be seen here, such as dwellings, workshops and food stores. At Roque St Christophe, beside the river Vézère, a large village was developed at different levels in the cliff face and was inhabited until the sixteenth century (Figure 11). It was abandoned when superior military technology during the religious wars of the late Middle Ages allowed the formerly impregnable site to be overcome. Evidence of human occupation over thousands of years has also been discovered here, and it is now a UNESCO World Heritage Site.





Figure 9. Museum house at Roc de Cazelle (photograph by the author).

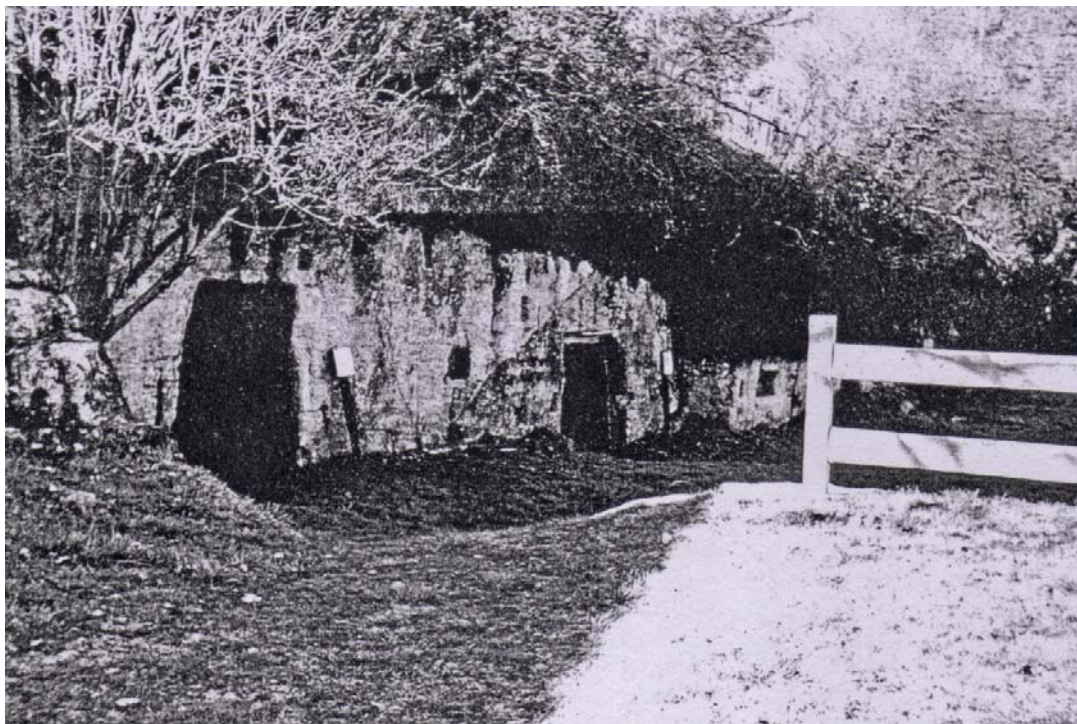


Figure 10. The museum at St Pardoux de Mareuil: the visitor centre is in one of the caves (photograph by the author).





Figure 11. Roque St Christophe, the village occupied until the sixteenth century is behind the two modern safety rails half-way up the cliff face (photograph by the author).

### **Cliff dwellings elsewhere**

Obviously, cliff-side dwellings and related uses are not confined to the Dordogne, but can be found wherever geological conditions have produced outcrops of relatively soft rocks that can be exploited in this way. The English Midlands has several examples. In Bridgnorth

(Shropshire), travelling in the funicular railway from Low Town to High Town reveals a short street at the mid-point of the cliff face, from which had been developed a small number of troglodytic houses in the caverns, which were in family occupation until the Second World War. They were closed down soon after the war, as being unfit for human habitation. However, these spaces still exist and can be entered by permission of the Town Council, but they remain wholly unused. Traces of dwellings cut back into the cliff face are also still visible from the main riverside road.

There was also an example of a furnished cavern-habitation dating from the 1770s in Kinver (Staffordshire), known as “Rock House”. This group of 11 rock houses became National Trust property in the mid 1960s, the Trust paying £113/19/- for one of the houses in 1964. Each house had a living area and a bedroom; there was no plumbing and they shared an outdoor toilet. They became disused in the 1950s. Some of the houses were restored by the Trust in the 1990s, another re-opened in 2012 having been restored to its 1930s appearance (Writtle, 2012). The home improvements company Anglian Homes has even used this property in its recent double-glazing advertising material: “we don’t think there are many people living in caves today, but whether it is for a modern home or for a new rock cave we are sure there will be one style that is just right for your home” (Middleton, 2012).

A further subterranean use of a very deep and extensive cavern existed at the same time in the east-facing cliff face of Brown Clee Hill (Shropshire). This was used as munitions storage for the Royal Navy and was approached by a railway line, with a station at Cleobury North. In fact a number of caves, natural and man-made, were used for military purposes during the Second World War, including factories, and some housed large numbers of workers (McCamley, 1998).

Another example is that of Chiselhurst Caves in Kent, used during the Second World War which became virtually an underground town for about 15,000 inhabitants (Inman, undated).

Some caverns in a low roadside cliff at Belbroughton (Worcestershire) are still used for storage purposes. Such subterranean spaces exist in other parts of Britain, but they are now almost entirely unused. These spaces might well be utilized in the future, for storage and related purposes which are sustainable in that they use very little energy and cause no environmental damage.

## **Discussion**

In many parts of France, cliff-side caverns have been used throughout history. In the case of Dordogne, the author has examined and, in many cases, photographed and surveyed about 60 examples of the contemporary uses, but thousands are known to be available for use – many of them seen by the author, but where the proprietor wishes to keep the matter private. However, the number of contemporary uses has grown during the last 24 years, and such cliff-side caverns are expected to be increasingly used for commercial and other suitable purposes in the future.

The troglodytic houses now occupied in Dordogne are not numerous, but those examined by the author were found to be quite comfortable. The short row of houses at Les Giroutaux would require very little improvement to make them fully inhabitable, and that at only moderate cost. These houses are provided with electricity and water, and there is a sewer in the road outside. Such a house would, arguably, be a better habitation than an apartment in a high-rise block but, because of their proximity to the National Museum of Prehistory at Les Eyzies, they might more profitably be rented as tourist accommodation.

However, it is at Brantôme that good examples of such houses can be found that are still in residential use. That shown in Figures 12 and 13 was purchased in 2010, at a sum normal for any house in this area. This example is one of a row of houses in the cliff-face that were occupied until the Second World War (Figure 14), but which are now principally used for storage purposes. In some cases they have small garden on the opposite side of the road, but bordering the river Dronne. This makes them very attractive for future residential purposes.

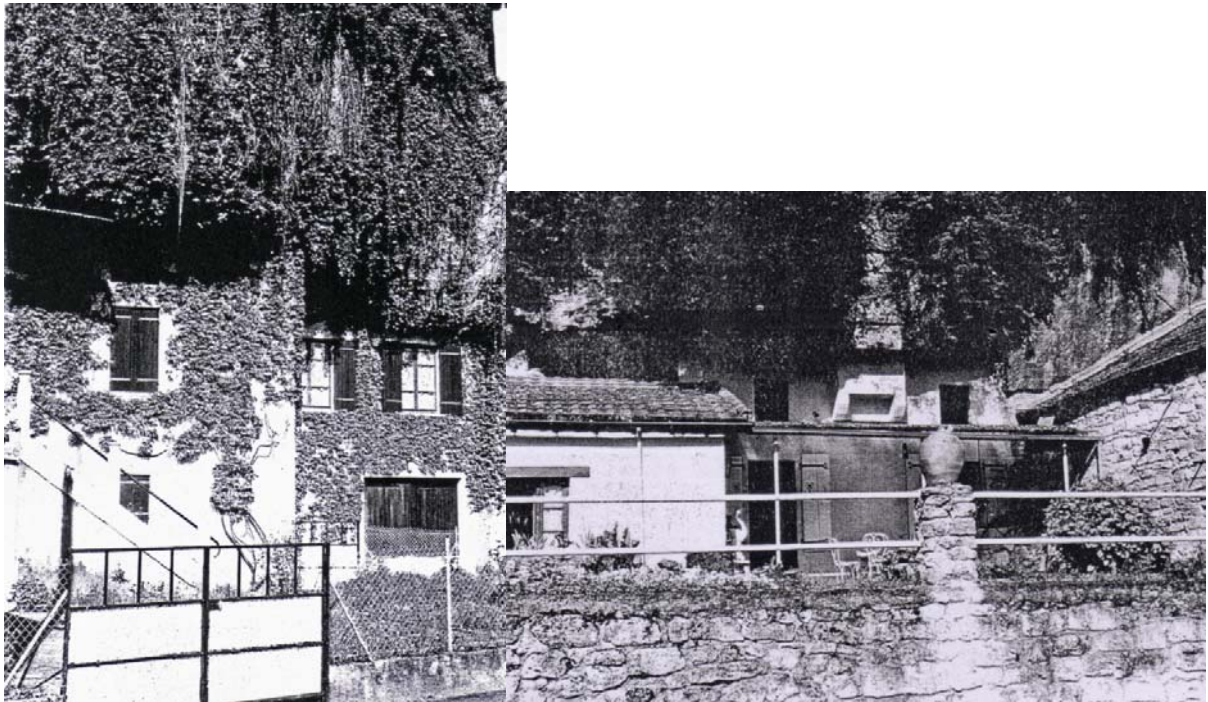


Figure 12. Modernised cave dwelling, 38 route de Bourdeilles, Brantôme (drawn by the author).

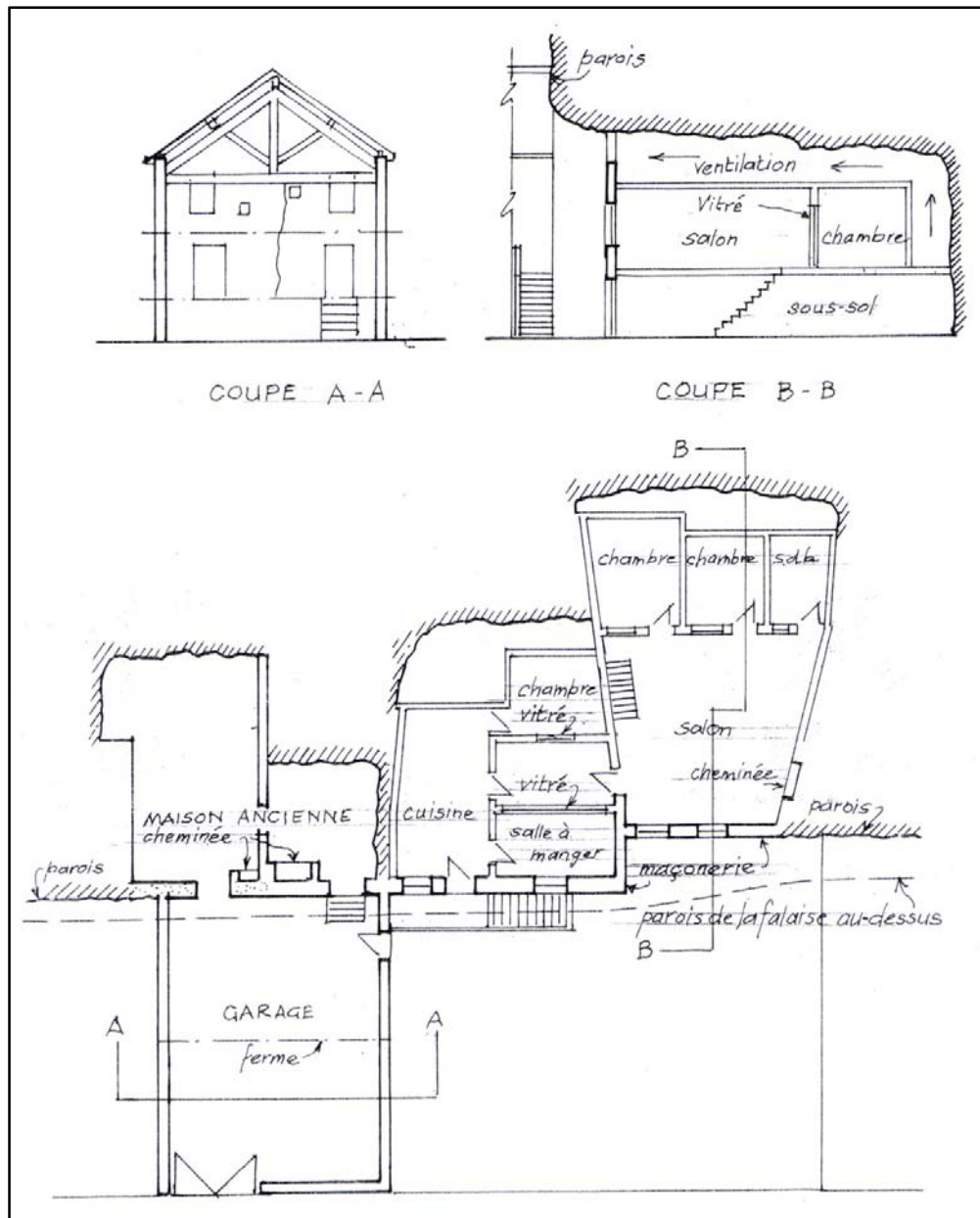


Figure 13. Modernised cave dwelling, 38 route de Bourdeilles, Brantôme (drawn by the author).

Other examples can be found in Dordogne which were formerly stone quarries, but which have been converted to comfortable houses, quiet and private. However, it should be noted that troglodytic habitations may be attractive to those individuals who seek a different way of life, but the general public show little interest in them. They generally wish to have a garden and space around their house.



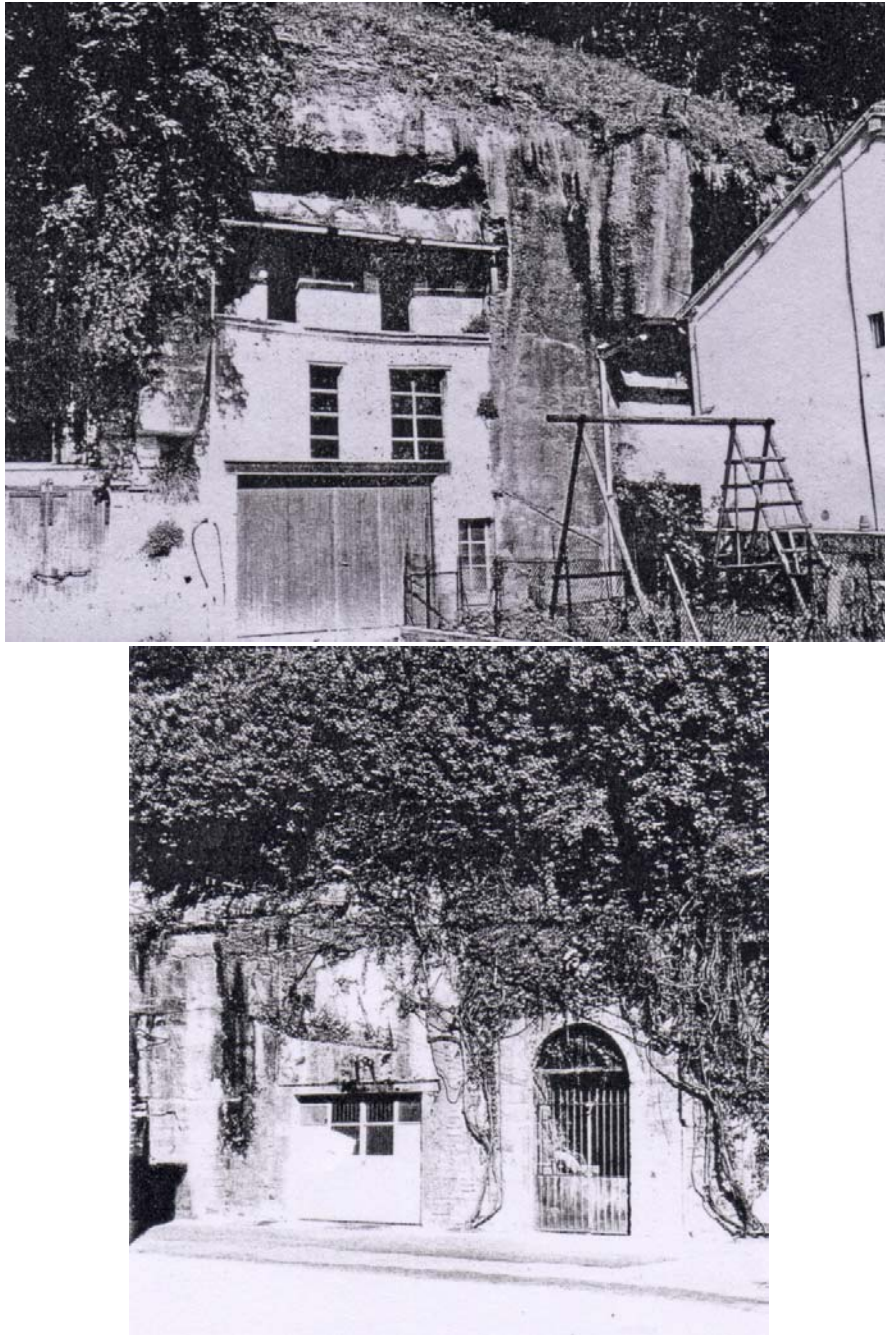


Figure 14. Further cave dwellings at Brantôme, many now unoccupied (photographs by the author).

## Conclusion

The continued occupation of cliff-side caverns for different purposes is only one element in the environmental character of Dordogne, which is part of the wider heritage from the past.

However, these uses are part of the rural tradition to waste nothing, and this paper describes them as a resource which is not wasted. Many proprietors of farms have such a cavern, closed by doors and used for storage – as have many houses built close to the cliff-faces – while many cliff-sheltered spaces are left open to hold farm implements (Figure 15).

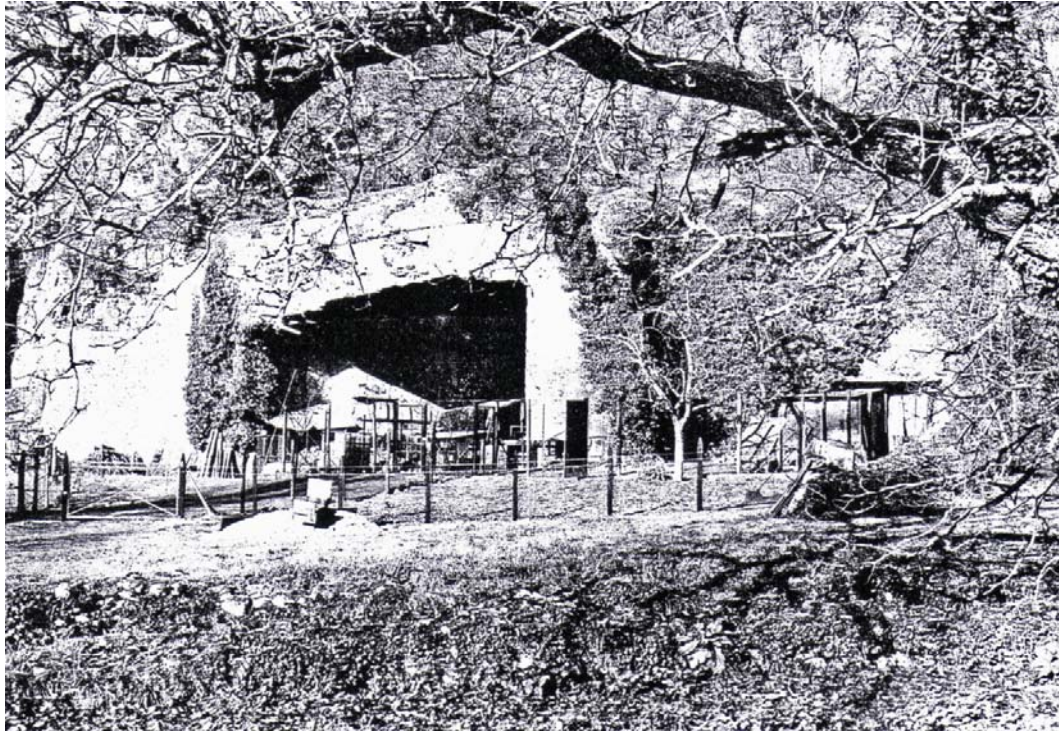


Figure 15. Bayac, in the Couze valley: cave still used for storage (photograph by the author).

This factor of practical conservation is one which distinguishes rural Dordogne from the modern way of life of a society of high consumption and waste. Being a tourist attraction drawing visitors from all parts of France and from many other countries, traditions of all kinds are preserved as part of the rural heritage which attracts them. Dordogne is thus an example of a sustainable way of life which respects, and does little damage to, the environment.

That conservation in all its aspects is now of premier importance throughout the world is confirmed by a range of publications in a variety of media, from the British Medical Association's influential journal *The Lancet* (Costello *et al.*, 2009) to the film *An uncomfortable truth* produced by former US Vice-President Al Gore (2006), which quickly became the third-biggest documentary film ever. However, despite these reasoned demonstrations of impending environmental crisis, the impact is soon forgotten by the public, and by industry and governments, and no real policy changes come into force.

A further testimony to the lack of political will is recorded by James Lovelock (2009, p. 8). He describes how, at a working group of the International Panel for Climate Change of the United Nations at Geneva in 2001, a fully-documented scientific report was presented, but its findings

were manipulated and modified by the representatives of each country, and particularly by those of the oil-producing countries, in order that their national interests would not be affected by the changed policies recommended by the report.

The occupation and uses of the cliff-side caverns in Dordogne is an example of good conservation: one which should be appreciated in the global context of environmental research. With a long history and a secure future, they show that all terrestrial resources should be used in a manner which is sustainable for future generations.

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