

Yeo Valley and Holt Farms

The Restoration of Wills Barn, 2006 - 2007



Wills Barn is believed to be nearly 300 years old, though there are no records to tell us who built it or what it was designed for. However, the proximity to the old Drove Road suggests that this was a staging post as the drovers brought their cattle and sheep down from the Mendips on their way to market in the valley below.

The original builders chose their site with care and great skill – the barn is built below the crest of the hill so that it has some good shelter from the prevailing westerly winds. The ground around and below it is mostly solid limestone rock which would have provided a firm foundation to build upon, as well as the stones with which to build it.

Restoration of the Barn began in July 2006 after planning permission was granted to convert it into an Education Centre. The building was, by then, in very poor condition, with the roof timbers rotten, many of the roof slates missing, some of the walls decidedly unsafe and a tree growing up from inside it! It hadn't been used for at least 40 years and only its sheltered position, firm rock foundations and the strength of the original construction had prevented it from total collapse.

The first job was to make the building safe, so the roof was removed and most of the top floor walls, apart from the gable at the back of the building, had to be taken down, stone by stone, until sound, strong stonework was reached. Once the walls had been made safe, they could be rebuilt with an inner wall of modern breeze blocks inside them, for both strength and very high standards of heat insulation.

A new concrete floor was poured on the ground level, with a further layer of insulation added to it. As the rebuilding of the walls was finished, the upper floor joists were installed and the roof beams put into place. All of the visible roof beams are made from sustainably-grown green Oak, with the joists hidden in the roof being made from sustainably-grown softwood. New slates were put in place with thick, solid-block insulation underneath them and, finally, the ceiling plasterboard panels were fixed into place, over yet more insulation.



The insides of the walls were given a further layer of insulation before being 'dry-lined' with plaster-board, the double-glazed windows and doors (all oak framed) were installed and, the wooden floor upstairs was laid. The larch planks used for this floor are reclaimed timber which came from another old building so you can see the original nail marks in them.

Finally, the wiring and plumbing 'first fix' was completed so that, as much as possible, the cables and pipes are hidden behind the plasterboard walls or below the floors. Once this was done, the downstairs ceiling and ground floor flagstones could be installed and the walls were ready for painting.

Outside, the walls of the building were re-pointed (the gaps between the stones filled with mortar), new walls were built around the yard and two tanks were buried beneath the new, higher, ground level. One of these is the 'rain-saver', which stores rainwater from the roof, and the other is the septic tank, which deals with the sewage from the toilets. You can see the four round inspection hatches for these tanks in the gravel surface of the yard.



Finally, in January 2007, the heavy batteries and the solar panels arrived for installation. The Photovoltaic solar panels which convert sunlight into electricity are mounted on a wooden frame at the back of the building, facing due south for maximum exposure to sunlight. Meanwhile, the pellet burner heating system was installed and commissioned and, by the end of January 2007, the building was ready for its new life.



The restoration of Wills Barn involved many different people, each with their own special skills. They included designers, builders, plasterers, plumbers, electricians, carpenters, painters, conservationists, green-energy advisors, planners and building inspectors.

The restored building now has a new lease of life and will be used for many, many years to come. We think that the original builders would be delighted to think that, nearly 300 years after they laid their first stone here, the Barn would be visited by so many people.



Wills Barn is a **Low Energy Building**. This means that it is:

- Constructed with low-impact, sustainable and re-cycled materials wherever possible. The floorboards are all re-used from another building, for example.
- Designed to minimise energy usage
 - It has extremely high levels of insulation (in the walls, floors, roof and windows) to reduce loss of heat
 - It utilises natural light wherever possible, so we don't have to use the electric lights very often
 - It uses carefully-selected, low-energy electrical appliances
- Designed to only use resources that don't damage the environment
 - We generate all the electricity used in the building through on-site solar panels
 - Waste wood sawdust (compressed into small pellets) is used to generate heat in a special central heating boiler
 - Rain water is harvested from the roof to flush the toilets so this reduces the need for mains water