



Old mines and quarries as a valuable resource

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The space created by quarries and mines exceeds the rate at which we fill them, so there will always be holes looking for uses.

Filling disused quarries with domestic waste is a common way of restoring them to previous ground level, but not all sites are geologically suitable or near enough to the places where waste is produced to make this use economic. Rain falling on domestic waste stimulates biodegradation, generating methane, carbon dioxide, and a highly polluting liquid known as leachate. If the geology is permeable (e.g. sand, gravel or fractured rock), this leachate may enter and pollute groundwater. Landfill gas may also migrate, causing an explosion or suffocation if it enters housing. There are many cases of groundwater pollution and there have been several incidents of methane explosions in the UK. Gas or leachate can be prevented from escaping by sealing the quarry with clay or very tough impermeable plastic, but leachate and gas are still produced within the site and have to be removed. Fortunately, landfill gas can be used to generate electricity, so many operators now control gas emissions at the same time as recovering energy. Leachate, on the other

After-use of quarries



A flooded quarry used for scuba diving. Stoney Cove, Leicestershire.

hand, usually has to be pumped out, treated and disposed of elsewhere.

Clearly, disposing of waste into quarries can create major environmental problems requiring costly engineering site preparation and on-going management. With future legislation requiring recycling and waste pretreatment prior to landfilling, the volume of waste material will reduce and alternative uses for quarries will be increasingly sought by their owners, the community and local planning authorities working closely together.

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Abandoned quarries can be scenically very attractive and can enhance the countryside, producing wonderful habitats for birds, animals and plants, and providing a haven for fish and fishermen. Even if they are less attractive, quarries can still be an asset to specific groups of people. Recreational uses abound, if the geology and hydrogeology are right. They include water sports such as boating, water skiing, canoeing, rowing, sailing and

scuba diving or off-roading for Land Rovers, motorbikes and mountain bikes. In addition rock climbing, horse riding, shooting clubs, caravan and picnic sites, film sets, geological trails, rock festival sites, firework and bonfire sites and wilderness play grounds are all possible uses for abandoned quarries, the list appears endless. There is even a plan to convert a huge china clay quarry near St Austell in Cornwall into the world’s largest green-house. It will be 200 ft high and half a mile long, creating four different climates in which to conserve endangered plants, and which will cost £1 billion. Alternatively, industrial developments, supermarkets and car parks are often possible, and some quarries are known to be used for explosives and ballistics research.

Just like quarries, underground mines or spaces purposely excavated can be put to use, especially if they are dry. Storage (oil, liquefied petroleum gas, wine, art treasures, ordnance), mushroom growing, mountain biking, industrial archaeology museums and research facilities for the detection of elementary particles are all examples of diverse uses for underground space. In the future we may well be living underground in artificial habitats beneath our overcrowded cities, or even beneath the countryside. Remember to watch this space. . .