
The Whatley area

Limited parking is available in Mells.

Whatley is a small village approximately three kilometres west of Frome. It sits on a ridge between the deeply incised Fordbury and Nunney valleys. The ridge is capped by Jurassic Fuller's Earth Formation and Inferior Oolite, which overlie the older Carboniferous and Devonian rocks. These older rocks are exposed in both Whatley Bottom and the Nunney Valley.

Whatley is perhaps better known for the large quarry to the north-west of the village [16] [ST 72899 47992]. This quarry is one of the two 'superquarries' on east Mendip. Operated by Hanson Aggregates, it produces a large range of materials for the building and construction industries. The company employs about 100 full-time staff at the quarry and a similar number of contract hauliers. Whatley is a working quarry, so access is only by prior arrangement.

The quarry was opened in 1937, when stone was transported by narrow-gauge railway to Hapsford Quarry, three kilometres away for processing. In 1974, the rail link was upgraded via a new route to the Radstock–Frome line, which necessitated building two tunnels and a bridge over the Mells River.

Quarrying on Mendip

The Carboniferous Limestone is an important natural resource, and is extensively quarried in east Mendip. This is because the Mendips are the closest source of hard rock to the large markets of south-east England. Nearly all the rock produced is used for aggregate and in the making of concrete products.

Many of the active quarries were granted huge concessions in 1947 before the era of stricter planning controls. Current planning policy is to concentrate quarrying into fewer quarries outside the Mendip Hills AONB in east Mendip, where the environmental constraints are fewer and good rail links exist.

In 2002, 76 million tonnes of limestone were quarried in Great Britain, of which Somerset contributed 11.5 million tonnes, the bulk from east Mendip. Approximately 670 million tonnes of permitted stone reserves remain in the Mendips. The total economic value generated was estimated in the mid 1990s at £150 million of which £40 million went directly into the local economy.

Today, the quarry is a highly mechanised operation, concentrated in a single large pit 1.6 km long, 0.6 km wide, and about 100 m deep. The quarry currently has permission to extend west to Finger Farm and east to Murder Combe, covering about 180 hectares. Up to five million tonnes of crushed stone may be produced annually, much of which is exported by a specially constructed rail link to markets in south-east England.

The quarry is located in the belt of steeply dipping Carboniferous Limestone on the northern limb of the Beacon Hill Pericline. The quarry extends across almost all of the Carboniferous Limestone formations, with the exception of the Oxwich Head Limestone, which outcrops just north of the quarry perimeter. Within the quarry, the limestone beds dip at around 65° to 80° to the north.

A thin cover of horizontally bedded, yellow, Jurassic Inferior Oolite up to three metres thick, rests, with a marked unconformity, on the Carboniferous strata at the eastern end of the quarry. As at Tedbury Camp Quarry, 1.5 km to the north-east [15] [ST 74700 48967], the unconformity surface is bored by Jurassic marine bivalves and worms.

The base of the quarry is currently below the natural water table. As the Carboniferous Limestone is a major aquifer, water in the rock leaks into the quarry. In order to keep quarrying below the water table, the water is pumped out to maintain a water level at approximately 50 m above OD. Groundwater leakage into the quarry is stored in a pond and used to clean the aggregate; it is recycled before being discharged locally into the Whatley Brook or pumped into the River Mells to help maintain river flow [9] [ST 73317 48821]. Up to 25 million litres per day in the winter months and 15

million litres per day in the summer have to be pumped out. Intensive monitoring suggests there has been very little impact locally on groundwater resources from the dewatering of the limestone aquifer.

Just north of Whatley village, where the road passes through a cutting [17] [ST 73200 47825], a short section through the steeply dipping Carboniferous Black Rock Limestone can be seen. Here, in 1867, the geologist Charles Moore recorded a thin bed of fossiliferous Lower Lias clay resting on the Carboniferous Limestone, and overlain by the Inferior Oolite.

Some 1.5 km to the south-west is Chantry, which lies on a narrow belt of Devonian sandstone in the core of the Beacon Hill Pericline and flanked on either side by the Avon Group mudstone. Small, southerly dipping outcrops can be seen along the banks of the lanes south of Chantry Pond. North of the pericline, a small stream flows off the sandstone and sinks underground into the Avon Group at Chantry Slocker [18] [ST 71597 47166], reappearing at Chantry Spring 400 m farther down valley.

Near Chantry village are two of the six iron works operated by the Fussell family. James Fussell V, the grandson of the James Fussell III and the founder of the Mells iron works, lived in 'The Chantry'. This large villa, built in 1825, is set in landscaped grounds just south of Chantry Church. Chantry Pond was a feature of these grounds, but also served as the mill pond for the Chantry Iron Works [19] [ST 72121 46809], just downstream. These works were operational by 1828, but probably closed in 1894 at the same time as the other Fussell iron works. Farther downstream, is the Railford Iron Works [20] [ST 72554 47222], now a private house near Railford Bridge. Like Chantry, the iron works here were a branch of the main works at Mells. It was auctioned off in 1886 when the Fussells were declared bankrupt, but continued to operate as a sawmill, finally closing in the 1930s.

Figures

(Figure 28) Aerial photograph of the Mells and the Whatley area.

(Figure 29) View of Whatley Quarry from the west. Somerset County Council Geodiversity Audit. © David Roche Geoconsulting.

(Figure 30) The use of limestone.

(Figure 31) Whatley Quarry rail link. Courtesy Somerset County Council Geodiversity Audit. © David Roche Geoconsulting.

(Figure 32) Whatley outfall.

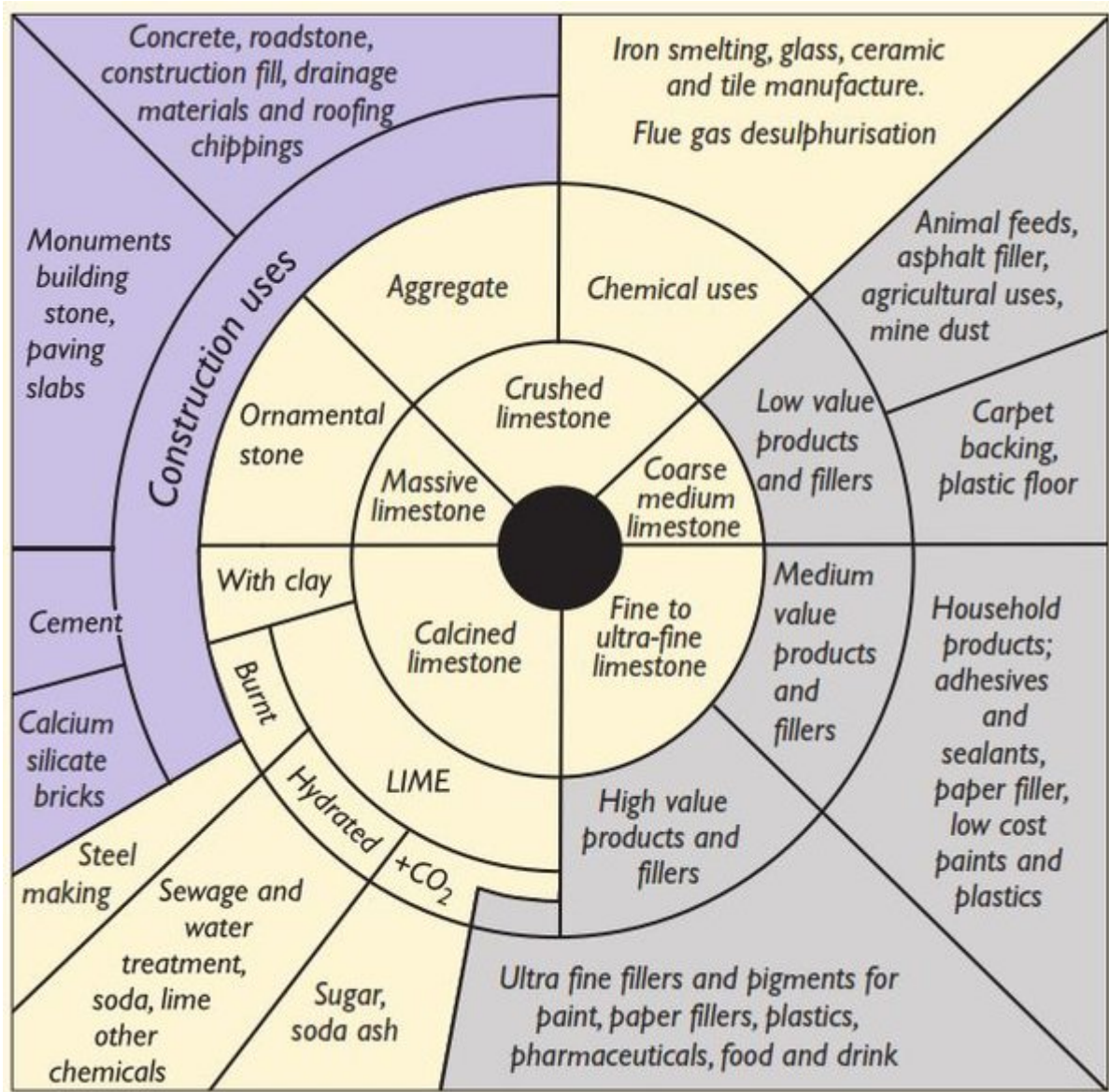
(Figure 33) Dumper truck, Whatley Quarry.



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