

wye valley



The Angidy Trail



A walk along Tintern's Angidy Valley
3 HOUR, 5 MILE CIRCULAR WALK

Follow the Angidy Trail and discover Tintern's hidden industry – the furnace, forge and wireworks, the workers' cottages, limekilns, tidal dock and church where generations of metal workers were baptised, married and buried.



Discover the heritage of the Wye Valley through our four themes



Hillforts

The brooding presence of massive hillforts built by Iron Age tribes, commanding wide vistas high above the Wye, reinforces the feeling that this area has been border country for millennia.

Angidy timeline

1568

- Company of Mineral and Battery Works starts wireworks at Tintern
- First brass made in Britain at Tintern

1600

- Blast Furnace built beside the Angidy, the first place in Wales to industrialise on such a large scale.

1780s

- Abbey Tintern Furnace first in UK to use cylinders rather than bellows.
- Cannon making at Abbey Tintern Furnace

1803

- New Tongs (Upper Wireworks) built at Pontysaison

1821

- 20 water wheels, including a tide-powered wheel operating along the Angidy

1826

- Abbey Tintern Furnace closes

1876

- Lower Wireworks Bridge constructed to provide a rail link

1878

- New Tongs Mill closes after 75 years operation

1880

- Tinplate manufacture starts at the Lower Wireworks site.

1895

- Tinplate works close – 300 years of metal working in the Angidy ends



Hidden industry

With fiery furnaces belching out fumes and smoke the Wye Valley was one of the earliest places in the UK to industrialise. Today the woodland and water which powered this industry provide a picturesque backdrop for this hidden industrial heritage.



River connections

Think of the Wye as a watery highway linking the riverside villages with the wider world and you'll begin to understand its importance in earlier times when boatmen navigated trows laden with cargo between the Wyeside wharves.



Viewpoints

Tourists discovered the beauty of the Wye in the 18th century when it became fashionable to take the Wye Tour and find inspiration in the picturesque viewpoints. The views have changed as woods and farmland are managed differently today, but you'll still find inspiration here!



The Angidy's Hidden Industries

The sound of the babbling Angidy river is the sound of energy – the water power which turned the wheels of industry in this valley for hundreds of years. Flourishing from the 1560s the Angidy was one of the earliest places in the UK to industrialise.

Making Britain less dependent on imported goods was government policy during Elizabeth I's reign. They set up The Company of Mineral and Battery Works and gave it a monopoly to produce wire, which was a highly valuable commodity.

The first brass produced in Britain was made in Tintern in 1568, but beset by problems, attention turned to iron wire making, which the Angidy became famous for. Tintern was soon producing some of the best wire in the country and by 1600 the wireworks were the largest industrial enterprise in Wales, employing hundreds of people. A job at the wireworks was much sought after – wireworkers were the local elite. They enjoyed voting rights, tax concessions, sick pay and pensions which were paid to those too old to work. A priest and a school teacher were funded by the company who also supplied ale and tobacco at the annual wireworks feast. When the plague arrived in the village the company 'did relieve divers

distressed and sick persons being then visited with the plague'. Before long the complex of connected iron and wire works stretched for two miles up the valley. By the early 19th century there were at least 20 waterwheels along the Angidy. Wire making dominated daily life here.

All this industrial activity was well established by the time fashion conscious travellers began flocking to Tintern on The Wye Tour. Although the romantic ruins of Tintern Abbey were the highlight, the nearby 'great iron-works, which introduce noise and bustle unto these regions of tranquillity' offered inspiration and excitement to many tourists. Far from viewing industry as a blot on the landscape, these visitors loved the sounds of the huge forge hammers hitting metal, the heat of the furnaces and the thick smoke which hung over the Valley!

'Its proximity to the Forest of Dean afforded a cheap and easy supply of ore.... while the woods that spread themselves over the face of the country, offered an unceasing quantity of a not less valuable material, charcoal. With a navigable river flowing at its feet, – open to every part of the kingdom, united to these advantages we wonder not that such a manufactory should be here established.' (Heath 1803)

🕒 Watermill with Tintern Abbey in the distance, F. Calvert, 1815. (© Chepstow Museum)

🕒 Front cover: Waterwheel at Tintern, Joseph Powell, 1805. (© Trustees of the British Museum)

🕒 Loaded trow passing Tintern Abbey. (© Private collection)

The Angidy's Hidden Industries

The wireworks needed supplies of a special type of iron which was often difficult to source. When Abbey Tintern Furnace was built around 1672 it supplied cast iron (too brittle to be made into wire) to the forge at Pont-y-Saeson, where it was transformed into osmond iron (which could be made into wire) by hammering and heating. The sound of heavy hammers would have echoed throughout the valley and the night sky would have been lit up with the glow from the furnace and the flying sparks as the hammers hit the iron.

The furnace and forges burnt charcoal which was made locally and brought in by pack horse. Spring was the charcoal making season; huge amounts were needed to produce osmond iron. Iron ore from the Forest of Dean and Lancashire was shipped along the Wye to the tidal dock at Abbey Mill. Pack horses carried the ore up to Abbey Tintern Furnace.

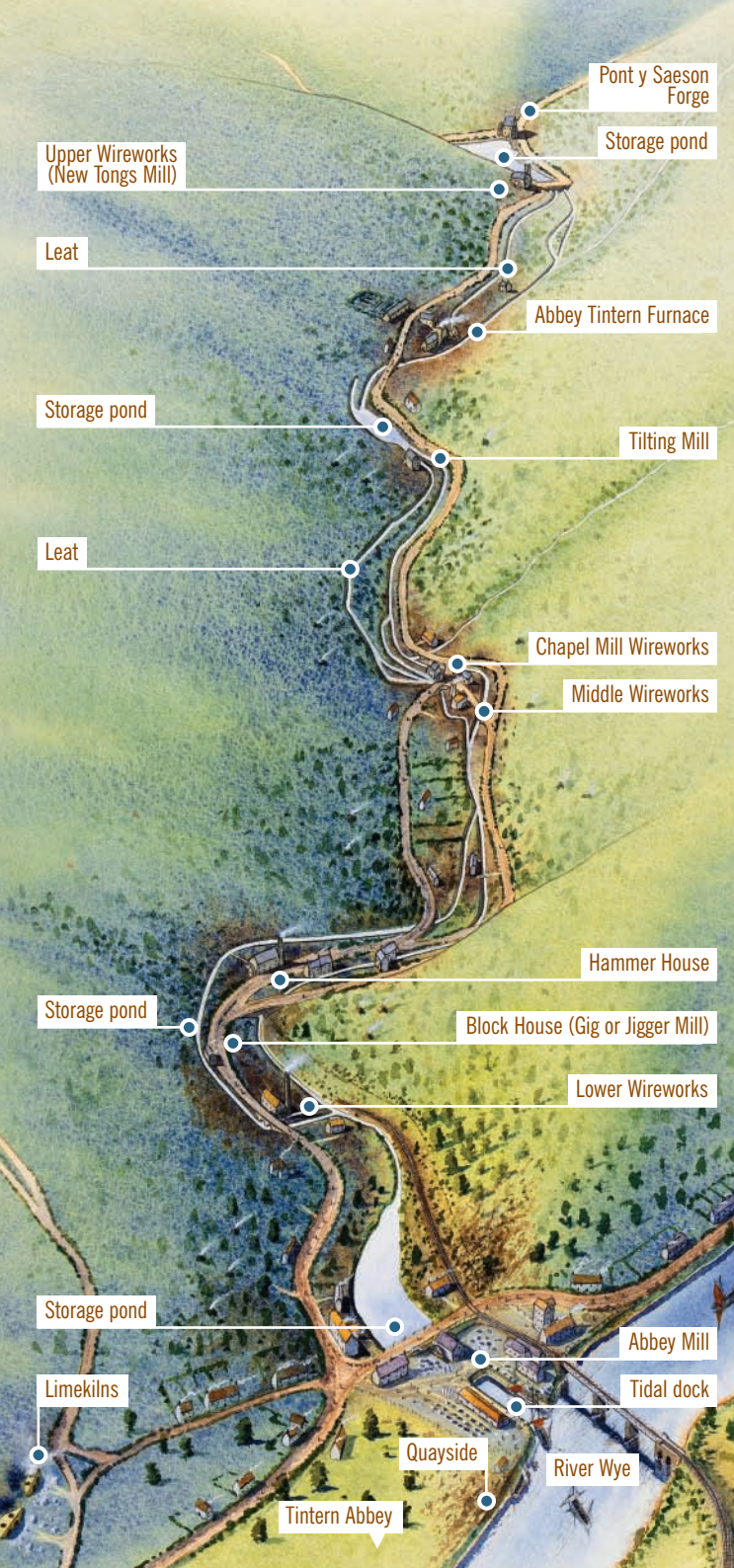
Pig iron cast at the furnace, and finished goods such as fire backs and cannons, were shipped out from the dock. Pig iron was also taken to the forge. Here it was reheated and beaten to make wrought iron, which could be crafted into more complicated shaped tools.

It was also at the forge that the pig iron was made into bars of osmond iron. These bars then went to the tilting mill, where they were hammered out and cut by shears into finger-sized rods. Before the rods could be drawn into wire they had to be heated to red heat for about 12 hours in a special furnace. This was called annealing. They were then soaked in water for several weeks.

As you can see making wire was a skilled and slow process. Next stop was the wire drawing mill, where the rods were heated and drawn through holes of decreasing size, in a metal sheet called a die. To make the finest grades of wire this was repeated over and over. The sites along the Angidy were part of a continuous industrial process – one of the earliest in the country.

📍 The industrial sites of the Angidy Valley

This drawing gives an impression of where the main industrial sites were located. Although they didn't all operate at the same time each of these sites has an industrial past. The Wireworks Bridge was the last development in 1876. (Phil Kenning)





START

Lower Wireworks car park
OS OL Map 14 Grid Reference: 526002
Follow the Angidy Trail way markers.

(Numbers in the text also appear on the map.)



1

The Lower Wireworks

The wall running the length of this car park is all that remains of one of the most important industrial sites in the Wye Valley. It's likely that when *The Company of Mineral and Battery Works* established wireworks at Tintern in 1566 they chose this site. Records show that a large building, 50ft long and 30ft wide with four water wheels and four hammers, two annealing furnaces and two forges were soon constructed.

Needing European expertise, skilled workers were brought from Germany to Tintern. Known in the village as 'strangers', they took five years to train up local men and perfect the art of 'wire drawing'. Before long local men were drawing great lengths of wire from one inch cubes of iron. Marmaduke Rawdon who visited in 1665 wrote about *the wire works* 'wher they draw wire from little iron bars into several siezes, a curiositie worth the seeing'.

What was wire used for?

Wire from the Angidy was of the highest quality and was much sought after. Large quantities were sent to workers in Bristol who made knitting needles, fishing hooks, bird cages, buckles, priming wire for guns,

- ⦿ This is one of the few images we have showing the buildings on the Lower Wireworks site c. 1905. Can you spot the tall chimney and the three storey building to its left, both of which stood here? (© Neil Parkhouse Collection)

pins and numerous other useful items! Wire was used in fashionable Elizabethan clothing, providing the structure for farthingales (which held skirts out) and stomachers (which pulled stomachs in). Across Britain thousands of people were employed making wire into carding combs for the woollen industry (wool was Britain's main export at this time).

The wire industry continued until the 19th century and local tradition has it that Angidy wire was used in the first transatlantic telegraph cable, but by this time the wire industry was in decline: steam was replacing waterpower and the rushing water of the Angidy no longer held an advantage.

In 1878 a new company leased the site to manufacture tinsplate but by 1895 the local newspaper was reporting that, '*Tintern Tin Works, which have been going irregularly for some time past, closed up last Sunday with no hope of an immediate restart.*' With the closure of the works 350 years of metal working in the Angidy came to an end. In the 20th century the site became a saw mill for stone and later timber.

Take some time to look at the artwork on the wall which explains how wire was made.

From the main entrance to the car park turn right.



2 Pond, Block and Hammer House

Above the road on the left was a large holding pond, which supplied water to the waterwheels on the Lower Wireworks site. The leat that carried water here is now lost beneath the roadside pavement. Also lost are two other buildings which stood in this area, the Block House and the Hammer House. At the Hammer House the iron was struck by giant hammers, making it denser. This was also called the Jigging Mill.

Take the first road on the left and walk uphill passing an elegant house on the right, which was probably an ironworks manager's home. John Gwynne was manager of the works in 1629 and this is called Gwyn House today. After the house are some steps on the right and then straight ahead a footpath which carries on in front of you (leaving the road which bears left up hill). Take this path which runs between the houses and keep straight on.

3 Route of old leat

You are now walking along the route of a long leat which took water to the Block House, Hammer House and the Lower Wireworks site. On the right you pass the old Bible Christians Chapel, established to serve the expanding non-conformist community of Chapel Hill. The next building, the imposing Valley House, appears on a survey of 1764 and was home to one of the ironmasters between 1820 - 40. A little further along stood The Globe, a pub and cider house used by the wireworkers to quench their thirst after work.

Walk in front of the new houses (which replaced The Globe) along the gravel path and keep straight on with the stream now on your right.

📍 Iron mills at Tintern. (© NLW)

As the stream bears away from the path to the right pass Primrose Cottage on the right, which is built right over the Angidy river.

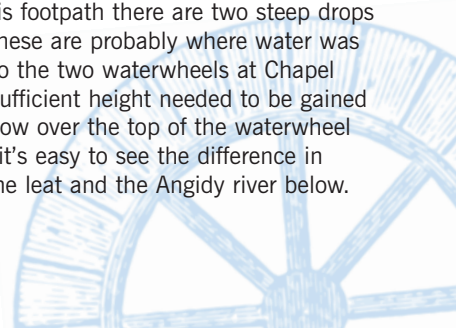
4 Middle Wire Works

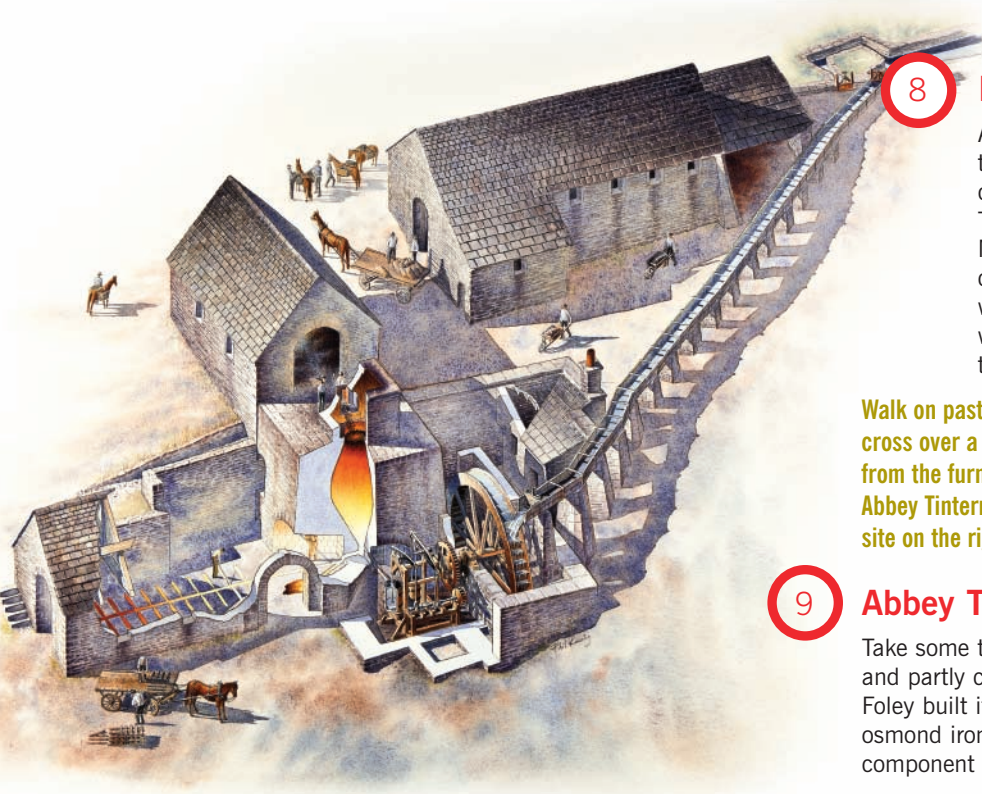
This area was the site of the Middle Wire Works, which extended up the valley to where Crown Cottages (built 1904) now stand. Primrose Cottage was once called 'Barrels', probably referring to one of the wiremaking processes carried out here. Iron oxide scale which formed on the outside of the wire rods (after being soaked in water) was removed by scouring - placing the wire in rotating barrels which contained crushed slag from the furnace.

Keep straight on passing in front of Crown Cottages and then walking between the houses until you emerge at the road in front of Chapel Cottage. Turn left onto the road and then immediately right along a footpath behind the cottages.

5 Chapel Wire Mill (Oyl Mill)

This was probably the location for the Chapel Wireworks (also called Oyl Mill). After a very short distance along this footpath there are two steep drops off to the right. These are probably where water was carried in a leat to the two waterwheels at Chapel Mill below you. Sufficient height needed to be gained for the water to flow over the top of the waterwheel and at this point it's easy to see the difference in height between the leat and the Angidy river below.





♣ Abbey Tintern Furnace around 1780.
 (© Illustration Phil Kenning)

6 Leat

The path now follows the route of a wide and well-constructed leat, which carried water for over half a mile from a storage pond to the waterwheels at the Chapel and Middle Wireworks. Keep your eyes peeled and you may spot stonework which lined parts of the leat.

Keep on this path, ignoring the first track off to the right, but when the track next forks bear right down to the river bank.

7 Tilting Mill or Tilt Hammer Mill

Look out for some dressed stonework beside the stream. This was the site of the Tilting Mill or Tilt Hammer Mill, where the iron bars were cut into long rods. The iron bars were heated and then placed under a huge hammer. A man had to turn the iron rods very fast so that no two strokes hit on the same place, and gradually the iron rods were lengthened into a coarse rough sort of wire.

8 Pond

A constant supply of water was vital for the iron and wireworks, so a series of dams and storage ponds were built. This pond supplied power for the Tilting Mill below the dam. Artificial channels called leats were constructed to carry the water from the storage ponds to the waterwheels. Many of these leats remain today as footpaths.

Walk on past the dam, keeping the pond on your right and cross over a footbridge. This area is littered with waste from the furnace. The path emerges on the lane below Abbey Tintern Furnace. Turn left and walk into the furnace site on the right.

9 Abbey Tintern Furnace

Take some time to explore the ruins of this excavated and partly conserved 17th century ironworks. Thomas Foley built it in 1672-3 to produce the special osmond iron needed to make wire. It was a vital component in the Tintern wireworks complex.

A visitor to Tintern in 1781 commented on the 'noble foundry of cannon', where he observed 'the gradations of the iron working, from the smallest wire to the largest cannon'. In the 1780s, one Tintern iron master, David Tanner, was making cannons to supply the British forces fighting in the American War of Independence. Tanner's guns were always cast with a large 'T' on them for Tintern or Tanner. Many of his guns failed government quality controls and some were sold outside the UK and shipped to Istanbul! Tanner was in business in a big way, running the Tintern Wireworks, which included this Furnace, and all the other associated sites in the Angidy between 1771 - 1798. He leased forges across south Wales and the Forest of Dean and owned ships to transport iron ore from Lancashire for his blast furnaces.

10 Furnace Cottages

Furnace workers and their families would have lived in the Furnace Cottages which overlook the site, classic two up two down cottages built into the hillside.

Leave the furnace site at the top right hand corner, near the charcoal house.



● Mr Thompson's wireworks at Tintern, 1807.
(© Yale Centre for British Art)

11 Leat

The footpath follows the route of another leat which supplied water from a pond further up the valley. A steady flow of water was absolutely vital to feed the waterwheel which drove the bellows, blowing air into the furnace to keep the temperature constant. A map of 1763 shows 'A garden for the use of the people at the Furnace' alongside the leat here.

Continue until you reach a dam and take the steps up to the bridge to view the forge pond.

12 Pond at Pont-y-Saeson

This hamlet known as Pont-y-saeson or Tintern Cross marks the highest of the industrial sites along the Angidy, some two miles above the tidal dock at Abbey Mill. In this little hamlet two rows of cottages remain; they were once homes for the workers at the wireworks.

13 Pont-y-Saeson Forge

Records show that in 1672-3 a new forge site was working here on the area behind the pond. Cast (or pig iron) from Abbey Tintern Furnace was probably brought here to be repeatedly heated and hammered into osmund iron needed at the wireworks.

14 New Tongs Mill (Upper Wireworks)

The Upper Wireworks or New Tongs Mill, built around 1803 by ironmaster Robert Thompson, was located on the hillside to your left. Some stone retaining walls and the remains of an annealing furnace are now all that is left. (Note this site is privately owned.)

Retrace your route back along the leat to the Furnace. At the car park turn left onto the road and straight away turn right just beyond Furnace Cottages (10) along the footpath. At the end of the dam take the path to the right, shortly crossing over a track and follow the path uphill through the woods. At the road turn left and immediately right, crossing straight over and onto another path, which soon descends onto a wide gravel track. Turn right onto the track and keep straight on until reaching a picnic table on the left, from where a gap in the trees allows a glimpse of the river. Take the left hand fork from the main track, which eventually becomes a narrow footpath which turns sharp left down steps under a bridge. From here you can take a short cut to return on the path straight ahead which descends to join the road just below the Lower Wireworks car park.

To continue on the Angidy Trail turn right immediately below the cottage and follow the footpath to Chapel Hill. At the end of this path turn left to pass the ruins of St.Mary's Church on your right.

15 St Mary's Church

Many wireworkers and furnace men are buried in this graveyard, which also contains some impressive tombstones of the ironmasters including Richard White, owner of Tintern Works, who died October 1752 aged 67, and Robert Thompson who built the Upper Wireworks and owned the Abbey Tintern Works from 1798 - 1819.

Continue downhill past the church and keep right down the steps with railings. At the road turn right. If you would like to visit the limekilns then bear right immediately where the road forks and follow the Wye Valley Walk behind the Abbey Hotel and over a grid. Turn left here along the Wye Valley Walk. After a short distance you will see the conserved limekilns on the right.



⤵ A trow on the Quayside. (© Graham Farr Collection, courtesy of Friends of Purton)

16 Limekilns

Many villages along the Wye had limekilns, exploiting local limestone which had many industrial and agricultural uses. They would often be rebuilt in the same location.

Retrace your route back past the Abbey Hotel. The route now turns downhill to the main road. Cross and walk down towards the Abbey.



17 Metal making at Tintern Abbey

In the Middle Ages, part of the Abbey grounds to your left, were used for industrial metal making. In 1568 the first brass to be made in Britain was manufactured here. This history of metal making locally may have assisted the decision to start the wireworks in Tintern.



⤵ A huge bark rick on the riverbank close to the Abbey. (© Francis Frith Collection)

Walk on until you reach the river bank. Turn left and follow the path along the river side.

18 Quayside

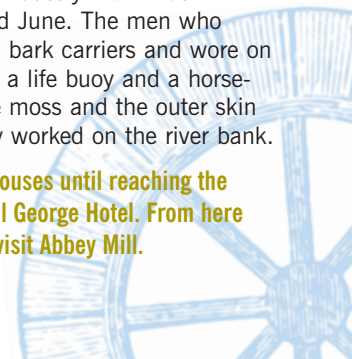
This river bank was once one of the busiest places in Tintern. The Wye was a shipping highway bringing raw materials in and taking finished industrial goods out. The quayside stretched along the river bank, past the Quay Master's House, towards the tidal dock at Abbey Mill. Sea-going ships and the flat-bottomed river boats, called trows, were an integral part of village life.

Continue along the riverbank passing Wye Barn on the left.

19 Bark Store

Wye Barn was once a bark store. Oak bark was one of the main cargoes carried by the trows down river to Chepstow, where the price of bark for the whole of Britain was set. It was then shipped to Ireland to be used in the leather tanning industry. Bark was harvested between April and June. The men who moved the bark were called bark carriers and wore on their head 'a cross between a life buoy and a horse-collar'. Women stripped the moss and the outer skin off the bark, singing as they worked on the river bank.

Follow the lane between the houses until reaching the main road in front of the Royal George Hotel. From here you can walk to your right to visit Abbey Mill.



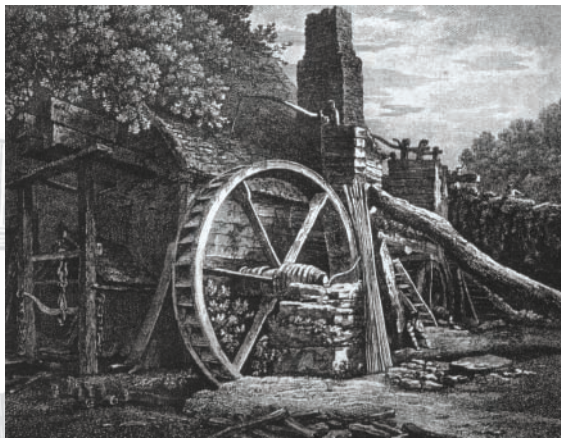


↪ The Wireworks Bridge and quayside c. 1885.
(© Neil Parkhouse Collection)

20

Abbey Mill

There has been a mill on this site for hundreds of years so at different times this mill has milled corn, forged iron, made wire, and most recently sawn timber. Today the restored waterwheel at Abbey Mill is the only one to survive in a village which once boasted at least 20 waterwheels.



↪ Iron forge at Tintern, c. 1794, probably Abbey Mill. On the right of the waterwheel is a bundle of rod iron. Drawn by T. Hearne. (Monmouth Museum)

A small tidal dock was constructed here in 1693, where the Angidy joins the River Wye (the grassed flat

area today), enabling boats to be loaded without being affected by the 7m rise and fall of the tide. There was also a tidal waterwheel in the dock, possibly providing power for part of the wireworks.

21

Wireworks Bridge

Adjacent to Abbey Mill stands the Wireworks Bridge, which was built in 1876 to provide a rail link to the Lower Wireworks site. A weigh house stood on the corner of the road before the bridge. Ironically, this bridge is probably the most visible reminder of Tintern's industrial past, although it was never really used.

Retrace your route back towards the Royal George Hotel.



↪ Two large warehouses stood beside the tidal dock at Abbey Mill in this very early photograph taken before the railway bridge was constructed in 1876. (© Aberdeen University Library)



📍 The mill pond beside the Royal George Hotel.
(© Private collection)

22

Mill Pond beside Royal George Hotel

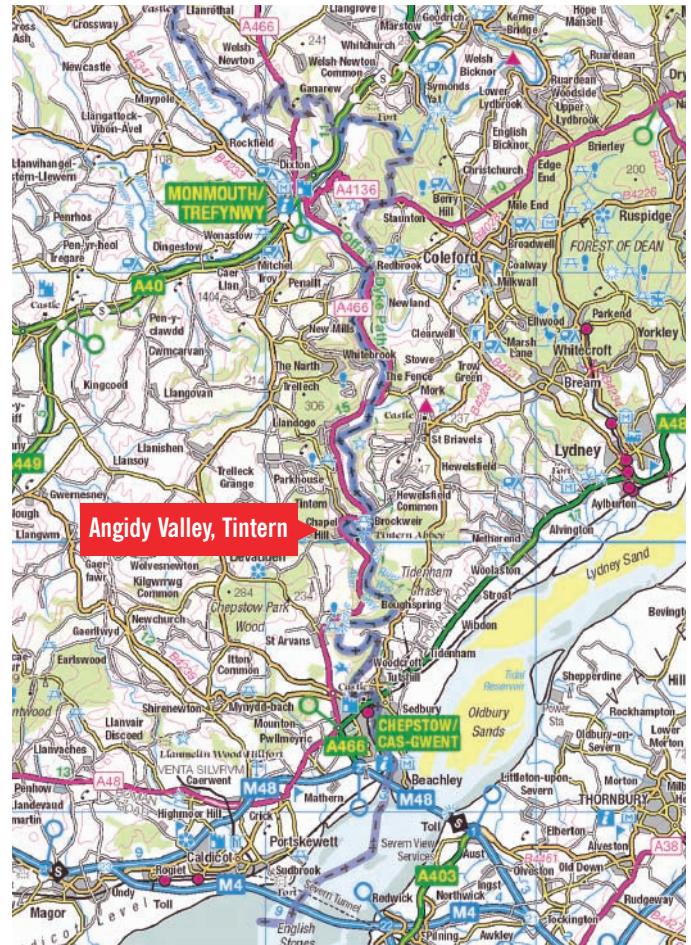
The water supply for the waterwheels at Abbey Mill came from the mill pond beside the Royal George Hotel (now filled in). Abbey House on your left was the home of Henry Hughes, a wire manufacturer who employed 120 workmen in 1851 and 160 in 1861. Another wire manufacturer George Mussells was employing 45 men and boys in 1861.

Turn right immediately after the Hotel and walk up the Angidy Valley. Look out for the former works house dated EF 1699, which stands on the left above the wireworks site.



📍 (© Herefordshire Archive Service)

Just before this house at the pedestrian entrance to the Lower Wireworks car park (as the road starts to climb uphill), imagine you are the people in this picture which James Wathen painted on Friday 20th May 1798. Can you hear the steady swoish of the water as it turns the waterwheel, and the resounding thuds of heavy hammers hitting metal? You may even catch a whiff of the nauseous smell of the tempering pickle!



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Wye Valley Area of Outstanding Natural Beauty (AONB): An internationally important protected landscape, straddling the England-Wales border for 58 miles of the River Wye. The AONB Partnership works to conserve and enhance the beauty of this living, working landscape for present and future generations.

Whilst all due care was taken in the preparation of the information contained in this leaflet, the Wye Valley Area of Outstanding Natural Beauty Partnership does not accept any responsibility for any inaccuracies which might occur.



Llywodraeth Cymru
Welsh Government



Wye Valley Dyffryn Gwy
Wye Valley Area of Outstanding Natural Beauty

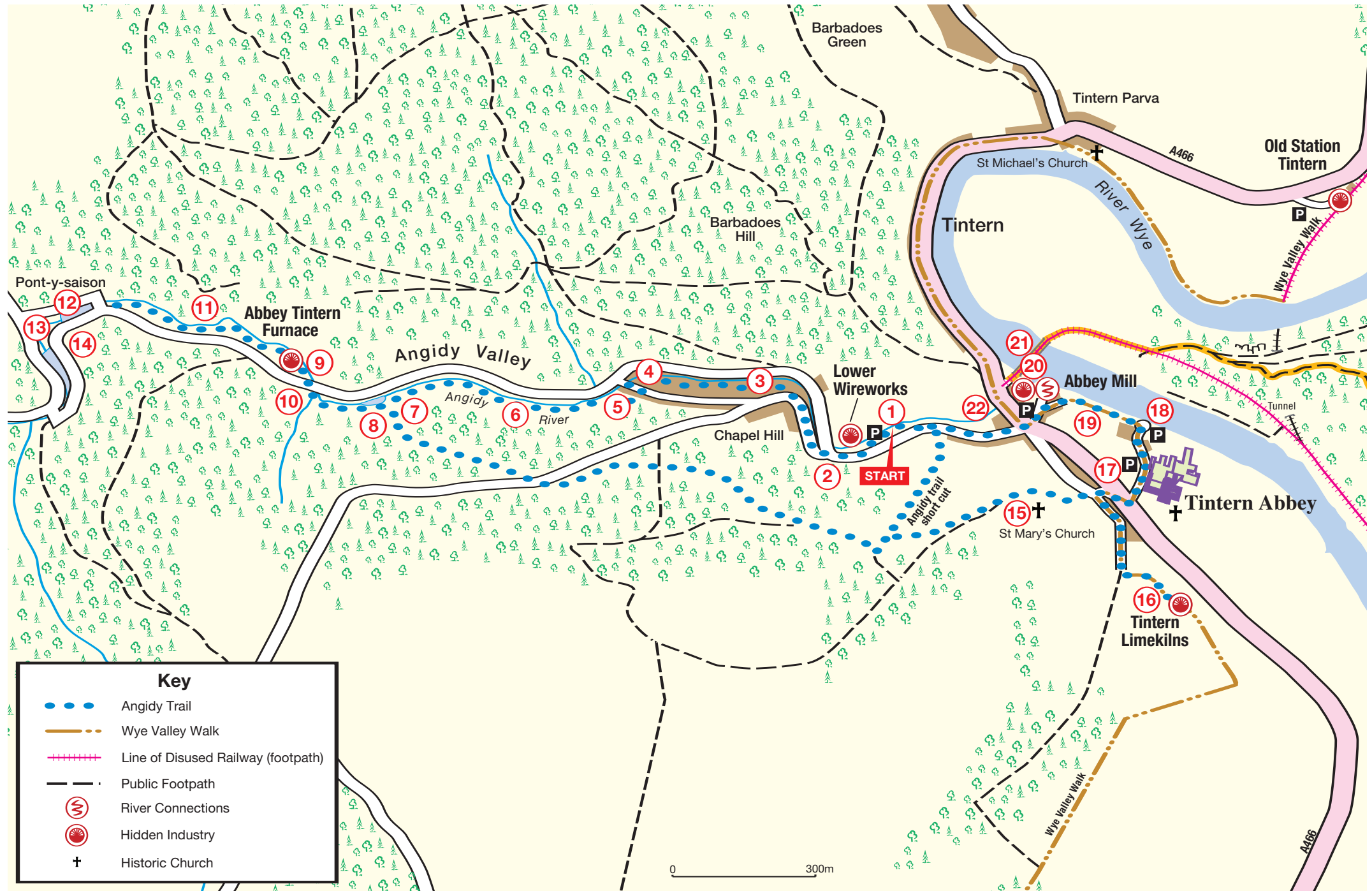


Tintern
Community
Council










The Angidy Trail

A walk along Tintern's Angidy Valley
3 HOUR, 5 MILE CIRCULAR WALK



Key

-  Angidy Trail
-  Wye Valley Walk
-  Line of Disused Railway (footpath)
-  Public Footpath
-  River Connections
-  Hidden Industry
-  Historic Church