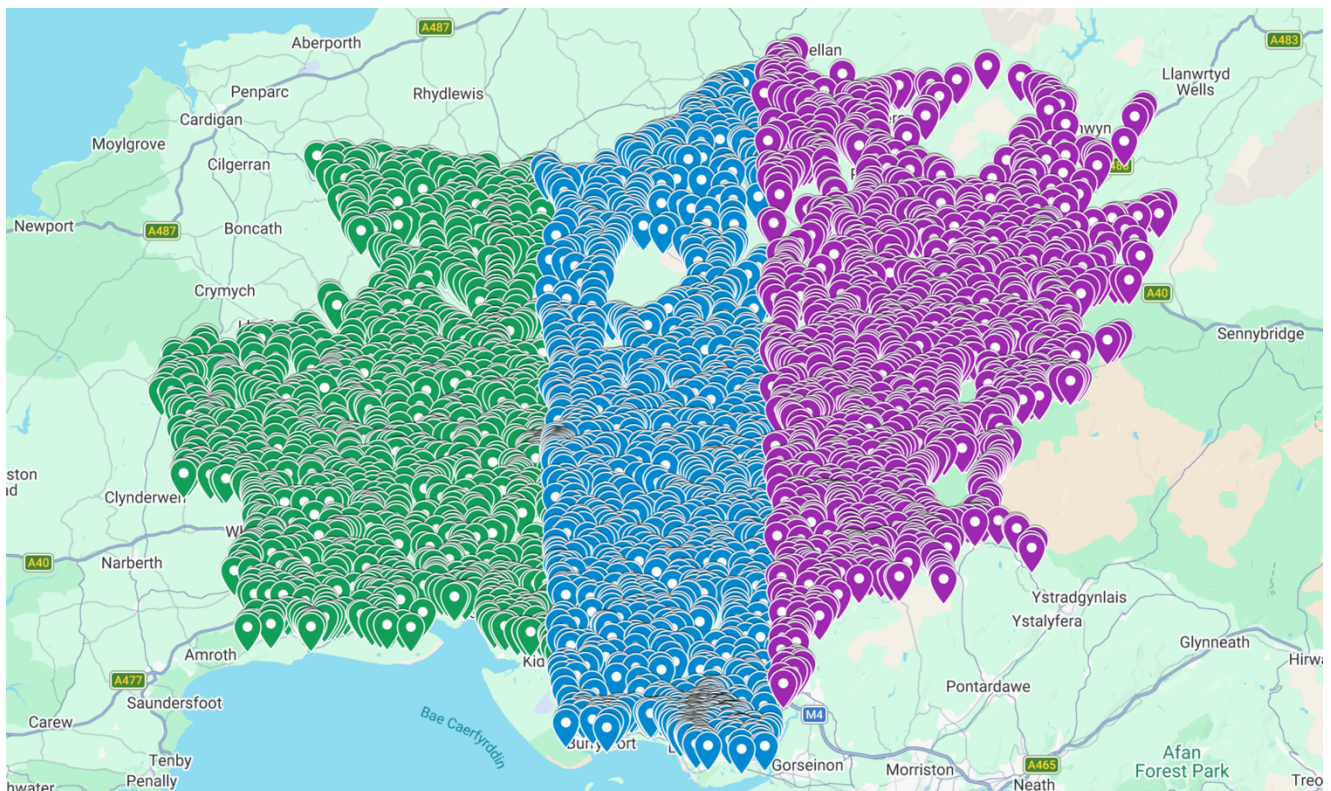


Bench Marks of Carmarthenshire

Cut Marks and Rivets from the Ordnance Survey Levelling Archive

An Interactive Map in Three Layers



<https://tinyurl.com/Carms-OS-Benchmarks-Map>



Introduction

Cut into the walls, bridges, churches and farm buildings of Carmarthenshire are thousands of small carved symbols that most people walk past without a second glance. Each one is an Ordnance Survey benchmark, a horizontal bar set above a broad arrow, chiselled by a surveyor to record a point whose height above sea level had been measured to the millimetre. The height was reckoned from Ordnance Datum Newlyn, the mean sea level observed at Newlyn in Cornwall between 1915 and 1921, which remains the height datum for mainland Britain to this day.

These marks were the working framework of the national levelling network. Height was carried across the country from a small number of fundamental benchmarks along lines of precise levelling, first order lines forming the national skeleton, second order lines binding the regions together, and third order lines running along almost every road and lane so that a point of known height was never far away. Two forms of mark account for nearly all of those shown here. The cut mark is the familiar chiselled bar and arrow on a vertical face. The rivet is a small brass or metal stud set into a horizontal surface, typically the top of a rock outcrop, a bridge parapet or a stone step, used where no suitable vertical face existed.

The network was maintained for more than a century, but satellite positioning ended the need for it, and the Ordnance Survey ceased general maintenance of benchmarks in the 1980s. The archive was frozen as it then stood. Since that time the marks themselves have been quietly disappearing as walls are rebuilt, buildings demolished, and roads widened. Every mark that survives is a small monument to the great national survey of Britain, and to the surveyors who walked every road in the county carrying their levels and staves.

The map described here plots 4,608 benchmarks across Carmarthenshire, drawn from the complete Ordnance Survey benchmark archive of over half a million records for Great Britain. The county records were extracted, their abbreviated grid references restored to full National Grid coordinates, and those coordinates converted from the OSGB36 survey datum to the modern WGS84 system used by online mapping. The marks are presented in three layers of 1,536 records each, covering the west, the centre and the east of the county. On the map, cut marks appear as burgundy circles and rivets as gold squares.

The Western Layer

The western layer holds 1,536 marks, of which 1,340 are cut marks and 196 are rivets. It covers the county from the Teifi valley at Cenarth and Newcastle Emlyn southwards through the valleys of the Cych and the Taf, taking in Whitland, St Clears, Laugharne and the coast at Pendine. The lowest mark in the layer stands little more than four metres above the sea on a bridge near the coast, and the highest reaches almost 318 metres on the hills of the north west. The great majority of the marks belong to the third order levelling lines that followed the roads and lanes, verified by Ordnance Survey levelling parties chiefly in the 1970s, with the earliest verification in the layer dating from 1942.

The descriptions carried with each record read as a portrait of the working countryside. Marks are cut into farmhouses and their outbuildings, into churches and chapels, bridges over the Teifi and its tributaries, milestones, gateposts, milk stands at farm entrances and outcrops of living rock beside the road. The layer includes marks on well over a hundred churches, chapels and farm buildings, each one fixing that building into the national height framework at the moment the surveyor passed.

The Central Layer

The central layer holds a further 1,536 marks, comprising 1,191 cut marks and 345 rivets. Its territory runs down the heart of the county, from the hills around Llanybydder and Llansawel through the lower Tywi valley and Carmarthen town to the Gwendraeth country, Kidwelly, Ferryside and the coastal marshes. It contains both the lowest ground on the map, a bridge mark below four metres on the levels near the coast, and heights approaching 400 metres on the northern uplands.

This layer carries the deepest history of the three. Nine of its marks belong to the first order levelling lines, the primary framework from which all other heights in the region were derived, and forty three of its records were last verified before 1950. The earliest record in the entire map lies here, a cut mark near the coast last verified in 1878, a survivor on the register from the first geodetic levelling of Wales, carried on the books for a century until the archive closed. Around Carmarthen and the valley towns the marks cluster thickly on bridges, railway structures, schools, public buildings and terraced streets, while the rural records again note farm entrances, churches and wayside walls.

The Eastern Layer

The eastern layer completes the county with 1,536 marks, of which 1,140 are cut marks and 396 are rivets, the highest proportion of rivets of the three layers, a reflection of upland country where bare rock often served the surveyor better than any wall. The layer covers the Tywi valley from Llandeilo up to Llandovery, the Amman valley and Ammanford, the upper Gwendraeth, and the great rise of the Black Mountain in the southeast. The highest point on the whole map is found here, a rivet set into the top of a rock beside the mountain road at very nearly 491 metres above Ordnance Datum, close to the summit of the pass over the Black Mountain.

Verification dates in this layer run from 1913 to 1974. Among its more evocative records are eighty-nine marks placed on milk stands, the roadside churn platforms that once stood at nearly every farm entrance, so that the levelling record now preserves the memory of a feature of rural life that has itself largely vanished. Bridges, churches, chapels, schools and milestones fill out the remainder, tracing the roads that climb from the valley floors to the open mountain.

Reading the Map

Each point on the map opens to show the full record for that mark. The entry gives the National Grid reference, the height above Ordnance Datum Newlyn to the millimetre as recorded in the archive, the original Ordnance Survey description in its terse surveyor's shorthand, the order

of the levelling line to which the mark belonged, and the year the mark was last verified by an Ordnance Survey party.

Two cautions should be kept in mind. The archive locates each mark to a precision of ten metres, so a pin marks the immediate vicinity rather than the exact stone. More importantly, the archive records the network as it stood when maintenance ceased, and no mark on this map is guaranteed to survive. Many will have been lost to demolition, rebuilding and road improvement in the decades since. Each entry therefore carries a field status line, and every mark presently stands as unvisited. The map is offered as a starting point, an invitation to walkers, local historians and community groups to seek out the marks in their own square mile and record what still remains.

Summary

Taken together the three layers place 4,608 Ordnance Survey benchmarks on the map of Carmarthenshire, 3,671 cut marks and 937 rivets, from the coastal levels below four metres to the shoulder of the Black Mountain at 491 metres. Their verification dates span a century of national surveying, from a coastal mark of 1878 to the final levelling parties of 1977. They mark churches and chapels, bridges and milestones, farmhouses, schools, gateposts, milk stands and bare rock, an index in stone and brass of the county as the surveyors found it.

The levelling network they served has passed into history, but the marks themselves belong to the heritage of every community that holds one. It is hoped that this map will help them to be noticed, recorded and valued before more of them are lost.

Sources

Ordnance Survey benchmark archive, complete dataset for Great Britain, from which all Carmarthenshire records were extracted.

Ordnance Survey documentation on the national levelling network, benchmark types and Ordnance Datum Newlyn.

Coordinate conversion from OSGB36 National Grid to WGS84 carried out for online mapping, with all positions treated as approximate to ten metres pending field verification.