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Corresponding author: Simon Blackburn

Title: A mathematical walk in Surrey

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A mathematical walk in Surrey

SIMON BLACKBURN

Royal Holloway, University of London

In summer 2007 I designed a 19-mile walk through Surrey, linking three locations with a mathematical theme and passing through some of the beautiful local countryside. The walk would be a long one for me, and I needed plenty of daylight. I set out in mid-September, before the summer was over, so that I need not rush.

I took the train from Effingham Junction to Guildford (Figure 1). From there, it was just a 15-minute uphill walk to The Mount Cemetery to visit the first mathematical location: the Dodgson family graves. The Reverend Charles Dodgson (Lewis Carroll) was buried here in 1898. He never lived in the area (he remained in Oxford even after he retired from his position of Mathematical Lecturer at Christ Church in 1881), but was a regular visitor to his sisters' house in Guildford. He caught influenza when visiting for Christmas in 1897, and died the following January.

One morning a year and a half ago, I led a rambling group through the graveyard on a cold winter's morning when the graves were half hidden by a heavy mist. Today, in light rain and with many graves sporting the bright yellow tags of a recent health and safety audit, the cemetery was not quite as atmospheric.

From Guildford I walked East. The town lies in a gap in the North Downs, which run east–west. The Greensand hills, of sand rather than chalk, run parallel to the Downs just to the South. I crossed the Wey via the North Downs Way footbridge, and admired the huge outcrop of golden Greensand that tumbles into the river there. But I stuck to the chalk from then on. To the south, just visible above the conifers on the poor soil of a Greensand outcrop, I could see St Martha's church. This is a well known landmark on the North Downs Way, the benches surrounding it a great place for lunch (and a very welcome rest point, especially if you've approached from the South).

Pewley Down is a wonderful wildflower meadow. The cow parsley and wild carrot had gone to seed, but knapweed and clover gave contrasting colour. Old man's beard trailed on the low foliage. Rosehips glowed red in the hedges, and the blackberries were in all colours from green to ripe. Horse chestnuts were shedding their leaves and the birches were starting to turn, but most trees were green, if tattered. A kestrel hunted above me, a missing primary feather a sign of its renewal of plumage in preparation for the hard season ahead.

At Netley Heath, above Gomshall, I turned north for the gentle descent to East Horsley. I passed five of the Lovelace Bridges as I descended, the first hints of the mathematical connection to the village. East Horsley was the home of Lord
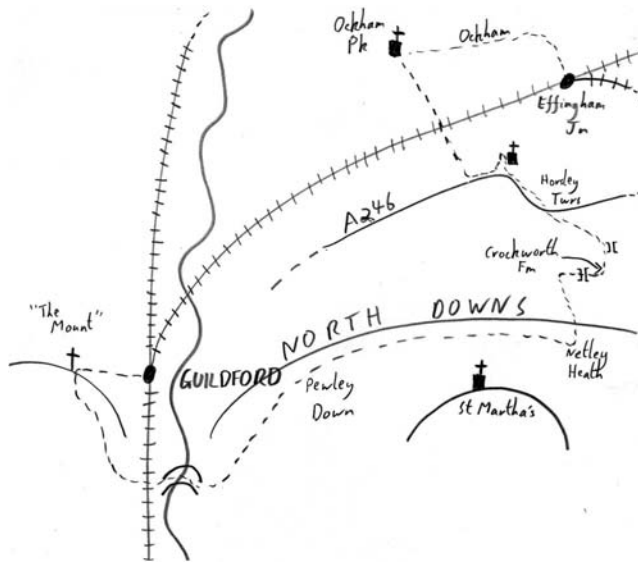
Figure 1. From Guildford to Effingham Junction, sketched by the author

Figure 2. Carwash in the style of Lovelace, photo by the author

Lovelace (1805–93) who has two claims to fame. The first is architectural. He spent his later years building all over the area, in a unique (some might say eccentric) style. The buildings, from the 1860s and 1870s, have walls of flint set off with red tiles for detailing. Moorish arches and gothic features complete the look. The bridges I passed were built in the same style, their ostensible purpose to transport timber across sunken local lanes and bridleways, from the upper slopes of his estate. The local style has been carried on to this day, with an automatic car wash on the A246 being my favourite example (Figure 2). Lovelace's second claim to fame is mathematical: he was married to Ada Lovelace (1815–52), billed as the world's first computer programmer after her correspondence with Thomas Babbage, the

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Figure 3.   Ockham church, photo by the author

55   inventor of the difference engine. She lived in the area, at Ockham Park just three miles to the North (Lord Lovelace's original home before he built Horsley Towers). She was the daughter of the poet Lord Byron (1788–1824), his scandalous reputation (he was famously described as mad, bad and dangerous to know') being a factor in her education in the sciences rather than the arts. She never knew her father, but was
60   buried next to him in Hucknell, Nottinghamshire, at her own request.

I visited St Mary's church in East Horsley where, in the north east corner of the churchyard, I found Lord Lovelace's mausoleum. Designed in his own distinctive style, it is currently undergoing restoration work. From there I walked to Ockham, and the third mathematical connection of the day.

65   Ockham Park itself is still a private home, but I visited All Saints church which lies next to the house but is publicly accessible. The church has a stained glass window celebrating William of Ockham (c. 1287–c. 1348). William was the originator of Ockham's (or Occam's) Razor, the principle that an explanatory theory which makes as few assumptions as possible is the most desirable. He was
70   born in Ockham, and educated as a Franciscan in (most likely) London and then Oxford. He was summoned to Avignon to answer charges of heresy, before fleeing to Pisa and then Munich under the protection of the excommunicated Ludwig of Bavaria. He spent the rest of his life in the Franciscan convent in Munich.

From Ockham, it was just a short walk to Effingham Junction, my walk ending
75   just as the light was starting to fade.