



# *Sheetlines*

The journal of  
THE CHARLES CLOSE SOCIETY  
for the Study of Ordnance Survey Maps

“Use of the Ordnance Survey for  
planning rural sewerage”

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*Sheetlines*, 107 (December 2016, pp 32-34)

Stable URL:

<http://www.charlesclosesociety.org/files/Issue107page32.pdf>

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Published by  
THE CHARLES CLOSE SOCIETY  
for the Study of Ordnance Survey Maps  
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The Charles Close Society was founded in 1980 to bring together all those with an interest in the maps and history of the Ordnance Survey of Great Britain and its counterparts in the island of Ireland. The Society takes its name from Colonel Sir Charles Arden-Close, OS Director General from 1911 to 1922, and initiator of many of the maps now sought after by collectors.

The Society publishes a wide range of books and booklets on historic OS map series and its journal, *Sheetlines*, is recognised internationally for its specialist articles on Ordnance Survey-related topics.

## ***Use of the Ordnance Survey for planning rural sewerage***

***David L Walker***

Richard Dean in his article *Ordnance Survey on the rails*<sup>1</sup> invites more attention to the use of OS data over the years and the benefits it has brought. In the same issue of *Sheetlines*, Bill Hines<sup>2</sup> draws attention to the reports by the Victorian sanitary commissions in Thomas Colby's library, and to Edwin Chadwick's letter seeking Colby's support. But, as recounted by Richard Oliver,<sup>3</sup> controversy ensued over responsibility for, and financing of, the topographical surveys needed to plan sewerage projects. From the writer's own experience, this article illustrates the use of OS data for planning sewerage schemes in the twentieth century.

Although grant aid under the Rural Water Supplies and Sewerage Act of 1944 had been intended to make better provision for rural areas, extra resources were made available in the 1950s to support the 'Macmillan' programme of building over 300,000 houses a year. Consulting engineers, mostly in Westminster, gained reliable 'bread and butter' work by adding rural district councils to their portfolios of more illustrious clients.

Schemes often covered several parishes at a time. To reduce the number of contract drawings, OS 25-inch plans (as we knew them) were cut and pasted to cover only the populated areas, and updated from planning applications to show later development. Licensed transparencies were made with the topography on the back, and the proposed sewer layout on top, to facilitate amendments. To avoid the need for wayleaves, sewers were normally planned within the highway curtilage, avoiding the edge of road as far as practicable, running straight between manholes no more than 300 feet apart, and (crucially) at a gradient no less than 1 in 250 (for seven inch pipes). Minimum cover was four feet, but the sewer also had to be deep enough to accommodate house connections at a gradient of 1 in 60. A series of pumping stations was often needed, especially in Lincolnshire.

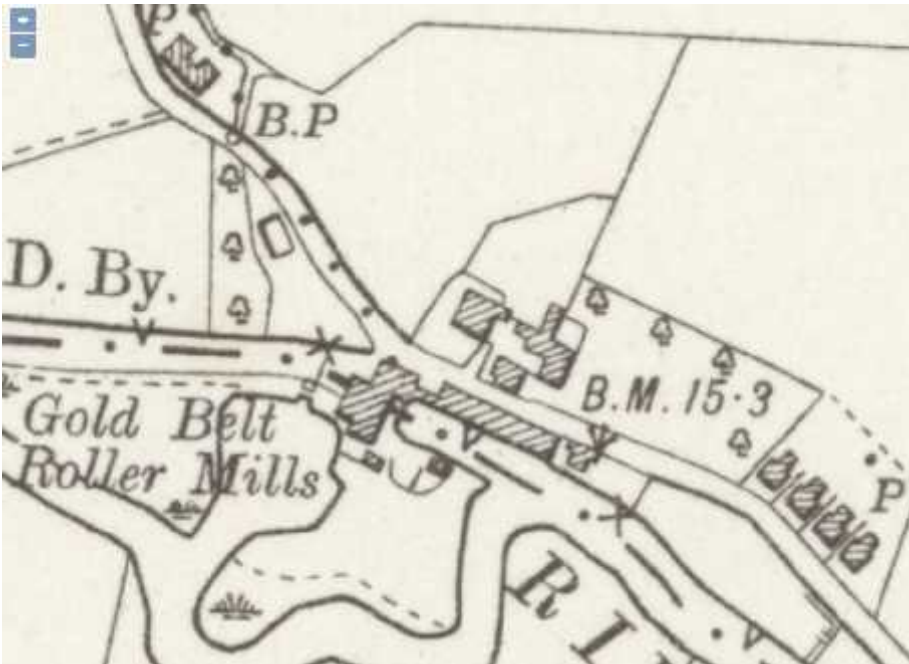
Within this context, in 1960, the writer's training included the planning and costing of an extension to the Brampton sewerage scheme to include the properties shown in the figures. Regrettably, instead of an outing to Suffolk, only a short walk to Caxton Street was needed, to purchase the appropriate 25-inch plan from Cook, Hammond and Kell for 6s 8d. The OS benchmark at Brantham Mill confirmed that a small pumping station would be required nearby to connect to the village system. Sewer sections, as well as plans, were easily produced from the OS spot levels of the surface of the road, shown with a cross at regular intervals. This invaluable feature of OS plans on most village roads must have benefited generations of sewerage engineers.

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<sup>1</sup> Richard Dean, 'Ordnance Survey on the rails', *Sheetlines* 106, 4-11.

<sup>2</sup> Bill Hines, 'Thomas Colby's book collection', *Sheetlines* 106, 12-20.

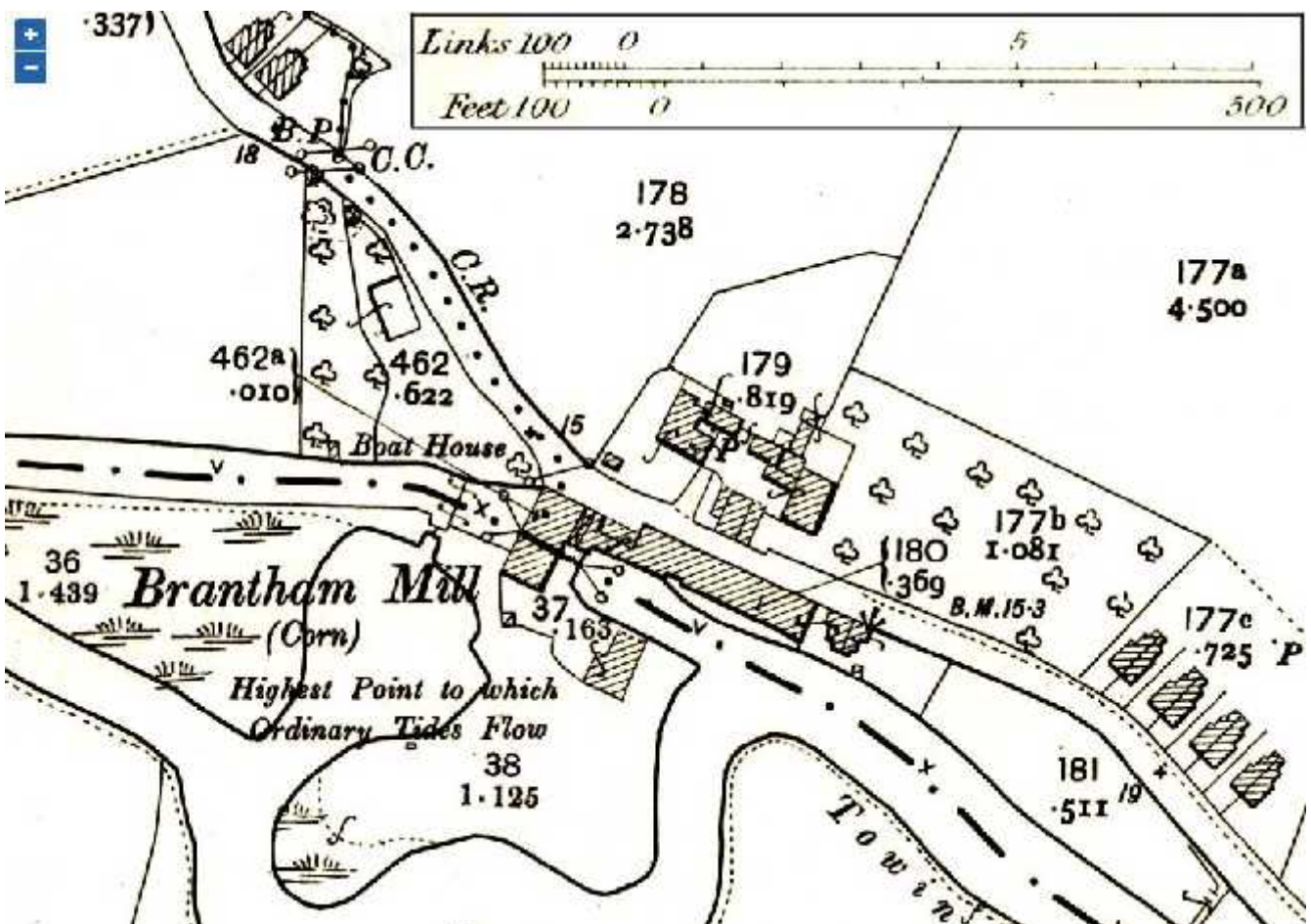
<sup>3</sup> Richard Oliver, 'The Ordnance Survey in the Nineteenth Century', 2014 – see index references under 'Health'.



left  
extract from six-inch  
Essex NXIX.SE revised  
1921.

below  
extract from 25-inch  
Suffolk LXXXVII.8  
revised 1902.

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'The figures illustrate how 25-inch plans, despite being more out-of-date, were much more useful for planning rural sewerage than six-inch plans. Road levels, where shown, were closer together, and the delineation of individual properties provided an excellent basis for site inspections. At that time I was unaware of 'the battle of the scales' a century earlier, and I am impressed now to find that the

Treasury, usually penny-pinchers, decided in favour of the larger scale on the grounds that ‘... if the nation incurs the cost of a survey, that survey ought to be of the kind most generally useful.’<sup>4</sup>

It is of course easier to argue that public works should consider all potential beneficiaries than it is to recover a share of the costs from those beneficiaries (and especially so after sixty years). In the 1960s, consulting engineers’ fees were based on a percentage of the construction cost, and OS licence fees were presumably much less than the considerable reduction in design costs (a saving which was enjoyed in Westminster rather than Suffolk).

In unsewered districts, where by definition little new development had taken place, surprisingly few difficulties arose from the use of surveys made sixty years earlier, supplemented by planning information from the rural district council. For Brantham Mill, all that was needed was for the firm’s resident engineer then in Suffolk to inspect for any low-lying properties and any unexpected development. But occasionally problems occurred: a huge caravan site in Lincolnshire was discovered only just in time; a Bedfordshire farm was found to be discharging effluent from vegetable washing, which fortunately became controlled in 1961; and the possibility of a combined works to serve adjacent parishes was nearly overlooked as they belonged to different rural district councils.

However, the main issue was to provide for the housing estates which mushroomed as rural sewerage schemes came forward in turn. Ministry approval of sewerage schemes was subject to Treasury controls which tightened or relaxed under its budgetary regulator. When the need arose to adjust sewerage schemes to reconcile financial controls with the housing targets, OS 25-inch (actually 1:2500) plans proved invaluable in saving time as well as money.

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<sup>4</sup> Richard Oliver, ‘The Ordnance Survey in the Nineteenth Century’, 2014, 267-269. Richard Oliver points out that this Treasury Minute favouring the adoption of the 1:2500 scale was not new in the 1850s: these words had first been written in 1840.