Report on the drainage of Goulston Street and neighbourhood, Whitechapel, / by Mr John Phillips, Chief Surveyor, and Mr Edward Gotto, Assistant Surveyor. 15th June, 1849.

Contributors

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Metropolitan Sewers.

REPORT

ON THE

DRAINAGE OF GOULSTON STREET, AND NEIGHBOURHOOD, WHITECHAPEL.

BY

Mr JOHN PHILLIPS, CHIEF SURVEYOR,

AND

Mr EDWARD GOTTO, ASSISTANT SURVEYOR.

ORDERED—"That the Chief Surveyor and Mr Gotto report on the works for the drainage and cleansing of a block of houses in Goulston street and the contiguous courts and alleys, in Whitechapel, with the view to their amendment by means of inprovement rates."

Works Committee—No. 405, page 368.

REPORT.

The area to which our attention is directed is exhibited on the accompanying Plan, and comprises about 9 acres, of which nearly 2 acres are occupied by public baths, a brewery, and a sugar bakery; the remaining 7 acres contain 402 houses and premises, with a population of 3,674, or rather more than 9 persons to each house, which is about double the number in average places. The consequence of this overcrowding is the accumulation of more than the usual amount of filth, and is the cause of much vice, disease, and misery.

Description of property and population.

The average rated value is 12*l.* per house per annum. There are

44 houses rated from			£3	to £4	per ann.
92	ditto		5	to 6	,,
54	ditto		7	to 8	,,
47	ditto		10	to 12	,,
91	ditto		14	to 20	,,
18	ditto		20	to 30	,,
56 houses and premises above			£30		,,

And the rated value of the whole of the property is 5,172*l.* per annum.

Present condition of the houses.

The foregoing data show that this place may rank amongst the very poorest in the metropolis.

The houses are generally dirty, and occupied by persons of the lowest class; the lower floors are inundated with filth and foul water. Very many of the houses have neither yards, privies, sinks, nor other convenience, and no sort of provision for drainage and ventilation.

The courts and alleys generally have not more than one common privy, and the surface water either runs into them or stands in stagnant pools, with, in many places, heaps of animal and vegetable matter.

Necessaries and cesspools.

Where there are privies the cesspools overflow, and are in the most offensive and filthy condition.

On these seven acres there are about 200 of such cesspools, exposing an evaporating surface of about 25,000 square feet, and containing about 150,000 cubic feet, or 5,555½ cubic yards of night soil.

From the very crowded character of the place, it is apparent that these cesspools, many of which are common to several houses, are filled in a very short time, and as frequently require the expensive and disgusting expedient of emptying.

But in many cases, indeed we may say most, several days before this operation is performed, they are allowed to overflow the seats, floors, and yards, so as to be unapproachable, and consequently the inhabitants are compelled to cast the filth from a distance into them.

There are several privies within the houses, which, having no drain, are far worse than those outside, and the foul smell ascends through the whole house, penetrating into every crowded room, and is perceptible to passers-by. The effect upon the constitution of the inmates is evidently indicated in their countenances, and renders them susceptible of those fearful diseases which are accustomed to attach themselves to such spots.

Cases of cholera.

Aware that cholera has in many places recently reappeared within the last few days, and that several malignant cases have occurred in this place, we deem it our duty to urge upon the Commissioners the importance and necessity of enforcing sanitary regulations without delay.

The water is supplied by the East London and the New River Water Companies, by pipes, which are laid in the streets, courts, alleys, and yards. Present water supply.

The mains are laid down at the expense of the companies, and the charge for leaden service-pipe is 9d. per foot, including joints.

The water is turned on daily, from 40 to 60 minutes; and there are no complaints of insufficiency, although when the water is on, much inconvenience arises from the crowd of persons, each striving for the precedence of supply. But, the inhabitants having few receptacles for it, a considerable quantity flows to waste, causing damp walls and rooms, to the very serious injury of the health of the people, and the value of the property; and mud is thus created which is carried into the houses.

The few wells in this place are but little used, except those attached to the Brewery.

There is a great deficiency of dust-bins; hence, the solid refuse is thrown into the streets and yards, and in many cases assists in filling up the cesspools.

The streets, courts, and alleys are for the most part paved with rough boulder stones, presenting an irregular surface, calculated to retain the refuse and filth thrown upon it, and which it is impossible to extract and remove with the most careful and diligent sweeping. Present condition of the paving.

The water that runs to waste from the stand-pipes assists in keeping some portion of the surface clean, but the remainder presents an extensive evaporating surface of mud and filth.

In considering the question before us, we are sensible that it involves the whole principles and practice of house-drainage and water supply in all their details. Proposed Improvements.

This block of houses shown on the accompanying Plan* is at present surrounded with large brick sewers, sufficiently deep to effectually drain the houses, excepting those in Old and New Castle streets; so that the necessary outfalls are already provided, without incurring any further expense on that account. We propose to bring up from these outfalls, main-pipe sewers, of 12, 9, and 6 inches diameter, which will branch along the backs of the houses, and into which sewers the private drains from water-closets, sinks, and rain-water pipes, &c., would be laid.

From the present great demand for stoneware drain pipes, there is not due care and attention paid to their quality as regards the necessary straightness and uniformity of bore by manufacturers in general. It is, therefore, of the utmost importance that measures should be speedily adopted, either by the Commissioners manufacturing perfect goods themselves, or contracting with other parties for the same. We have, however, availed ourselves of the best description of articles yet submitted.

The expense of the main-pipe sewers is proposed to be paid by a Special Sewers Rate extending over a term of 22 years, to be levied only upon the houses draining into them.

The expense incurred in constructing house-drains, including water-closet appa-

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* The Plan, prepared specially for this Report, contains every information necessary for the arrangement of the drainage. The cost of the Plan and Survey was at the rate of 1*l.* 5*s.* per acre.

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ratus, traps and sinks, with the laying on of the water to the water-closet pan, and all the private drainage works complete, should be paid by an improvement rate for 22 years, on each house so benefited; unless the owners are willing to compound for the payment of the same, either in a shorter time, or at once.

The whole of the main-pipe sewers might, by adopting the system of a Special Sewers Rate, be laid down at one time, under one contract and superintendence; but it is obvious that no improvement could be effected to single or isolated properties, except at considerable cost, if the several owners were bound to bring up from the main outfalls proper sewers to such separate properties, as this piecemeal work would require larger and considerably more expensive sewers than are necessary for their purposes, in order to accommodate other properties; thereby incurring expenses which the value of their property would not warrant them in doing. This has hitherto deterred individual proprietors—however willing—from performing what was requisite; and is the substantial reason why many crowded districts have from year to year been without drainage, in the fearful condition we see, and in which they will remain until compulsory and united measures are adopted for their alleviation.

The drainage we propose being generally at the backs of the premises, the works cannot be carried out efficiently and systematically without either the concurrence and co-operation of the several owners and occupiers; or the exercise of the compulsory powers vested in the Commissioners.

But as, in consequence of the subdivision of property and the difficulty of finding the owner, of the multiplicity of tenants, and the constant changes of occupation, there would certainly be serious delay in procuring such concurrence and co-operation, we recommend that immediate steps be taken to carry out the work we propose.

Water-closets and dust-bins.

Every cesspool should be emptied by the pump and hose, and filled up with as much despatch and as little nuisance as possible. And we esteem it necessary that, in its stead, each dwelling-house should be provided with at least one earthenware syphon-trap water-closet complete, requiring no other appendages than a circular wooden rim for the seat, so that such conveniences might be introduced within the houses which have no yards, without occupying much of the space already too limited for common ventilation. This applies in no less a degree to those houses that have small yards at the back, the water-closets and dust-bins in which should, on this account, be of as small a size as possible, consistent with actual accommodation; with this view we would recommend that all new works of this description should be of hollow bricks, the manufacture of which is now in a forward state. And, considering the number of these buildings in the midst of this confined and crowded locality, it is manifest that the reduction of their size must conduce to better ventilation, an advantage independent of the economy in their construction.

On sanitary grounds we would also reduce the capacity of dust-bins, so that they should only contain the dust and solid refuse of the house for two days at the most; but we would observe that it is an important duty on the part of local authorities to compel the *daily* removal of such refuse by authorised dustmen, who should perform this work without the customary exaction.

Water supply.

It has been before stated that main-pipes are already laid in the streets, courts, alleys, and yards; and in many places service-pipes are laid into the houses. Works for affording an abundant supply of water, not only for domestic use, but also in combination with the drains for their thorough cleansing, are as important and necessary as the actual works of drainage, and should be simultaneously carried out so as to ensure the successful action of the small tubular drains which are here proposed to be laid down.

Under the present circumstances of intermittent supply, cisterns are necessary, for which, in our estimate, we have provided accordingly. By this arrangement the extravagant waste of water which now prevails from stand-pipes would in some degree be obviated, as the inhabitants would only draw from the cisterns when they require water.

Under a constant supply of water, the cisterns would be dispensed with, and the cost of laying on the supply much reduced; but another great advantage already alluded to in reference to water-closets and dust-bins would be secured, namely, the additional space for breathing-room.

Moreover, in such arrangements, earthenware service-water pipes might be introduced, which can be furnished at a still greater reduction upon the price of iron pipes than is effected in the substitution of iron for lead.

Estimate Special Sewers Rate.

Much of this block is at present unpaved, but the whole of it requires either paving or re-paving.

In preparing the comparative estimates (for details see Appendices) we find the expense of laying the main sewer pipes would be—

	£	s.	d.
As here proposed, and if the paving be made good by the Commissioners .	614	14	1½
If at the present advertised prices of pipes, and if the paving were made good by the parish authorities	873	11	1½
If the same extent of sewers were done under the system pursued by the former Tower Hamlets' Commission	3755	0	0

It would require an annual amount of Special Sewers Rate of 40*l.* for 22 years, or about 1¾d. in the pound on the rated value, to defray the expenses of the main-pipe sewer; that is, the occupier of a house rated at 10*l.* per annum would have to pay an annual sum, for 22 years, of 1s. 5½d. for this work, whereas the frontage charged on the old system for such a house would be 7*l.* 8s. 6d. of immediate outlay.

Private Improvement Rate.

Assuming that each house shall be provided with an efficient water-closet apparatus, kitchen sink, sink to the yard or area where required, with proper discharging pipes trapped at the inlets, together with laying on the water to water-closet, with stop-cock and stool-tap, the estimate for the whole house drainage would be 2,314*l.*; but if all the requisite works were carried out on the constant supply principle, the total amount would be 1,283*l.* 17s. 9d., or about half, irrespective in both cases of the main-pipe sewer provided for by the Special Sewers Rate already mentioned.

Comparative Estimate of Works, the expense of which is recommended to be defrayed by an Improvement Rate.*

No. 110 *on the Plan, a fourth-rate House.*

For emptying the Cesspool and substituting a *Water-closet Apparatus* with Slate Cistern over, and Water laid on to the Pan, *Yard Sink and Trap*, with a 4-inch Drain from the same, and a *Kitchen Sink* with a proper Drain.

DESCRIPTION OF WORKS.	(See Appendix B).—Total Estimate of Drainage to a House with Cesspool, Half-Brick Barrel Drains, &c.	(See Appendix C).—Estimate if the Work were done in the manner at present usually followed by private Builders, at the Advertised Prices for Materials, and with the present intermittent Supply of Water.	(See Appendix D).—Estimate if the Works were done by Contract under the Commissioners, with the present intermittent Supply of Water.	(See Appendix E).—Estimate if the Work were done by Contract under the Commissioners, and with a constant Supply of Water.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Emptying and Filling up Cesspool, and substituting a Water Closet Apparatus, Slate Cistern, and Laying on of Water	– – –	6 1 7	4 8 4	1 16 11
Providing a Yard-sink and Drain - -	– – –	0 16 2	0 11 2	0 11 2
Kitchen Sink, and fixing with 2-inch Drain - - - - - - - - - - -	– – –	1 2 3	0 15 7½	0 15 7½
Total - - - - - -	8 15 2	8 0 0	5 15 1½	3 3 8½

* See Appendices.

Distribution of charges.

The average cost of the drainage of each house under the present circumstances, it will be seen by the foregoing table, would be *5l.* 15s. 1½d.; or 7s. 5¾d. per annum, or 1¾d. per week, for 22 years, as an improvement rate. We estimate that the extra annual expense of keeping in repair the houses on account of damp from want of drainage, and that of emptying the cesspools (which fill more rapidly here than in other places less crowded), to be at least four times the annual amount estimated above for every necessary work of sewers, drains, water-closets, sinks, and water supply. But of the additional

inconveniences and preventible disease engendered by the present state of things, no adequate calculation can be formed. The whole yearly amount to be levied upon a house rated at 10*l.*, including the expense of house drainage, laying on the water, and the special sewers rate, will be 8s. 11d., or 2d. per week for 22 years.

And, finally, in accordance with the 65th section of the Metropolitan Sewers Act, we have to report that the most advantageous mode of contracting would be by tender for the execution of the whole of the works, and for maintaining the same in repair for a term of five years.

Recapitulation of Recommendations.—1st. We recommend that notice should be immediately given of making a special sewers rate under section 91, and that fourteen days' further notice, according to section 60, should be also given of the Commissioners' intention to execute the work undermentioned, namely:

2ndly. To lay down main sewer-pipes in the position and of the sizes described on the accompanying Plan.

3rdly. To serve notices (according to section 48) upon the occupier to empty and destroy the existing cesspool, to substitute a water-closet, and to construct efficient drains into the said main-pipe sewer, according to the Plan deposited at the Principal Office; and on his failing so to do within a reasonable time, to be stated in the notice, that the Court order the work to be done, and the expense levied by an improvement rate, of such an amount as will be sufficient to pay the principal, with interest, at 5 per cent., in 22 years.

4thly. To request the local authorities to co-operate with the Court, by foregoing the usual charge for making good the paving, beyond the actual expense incurred, and to improve the condition of the paving throughout this block of houses.

5thly, and lastly. That as the cholera has, when prevalent in the Metropolis, invariably appeared in this place, the Court order the necessary steps to be taken forthwith to carry out the recommendations of this Report with the least possible delay.

JOHN PHILLIPS,
Chief Surveyor.

E. GOTTO,
Assistant Surveyor.

METROPOLITAN SEWERS OFFICE,
No. 1 Greek street, Soho square,
15th June, 1849.

APPENDIX A.

COMPARATIVE ESTIMATES FOR SPECIAL SEWERS RATE.

DESCRIPTION OF WORK.	Estimates at the present Advertised Prices of Pipes, and if the Paving were made good by the Parish.			Estimates if the Pipes were manufactured by Contract under the Commissioners, and the Paving made good by the Commissioners' Contractor.		
	Prices. s. d.	£ s. d.	Total. £. s. d.	Prices. s. d.	£ s. d.	Total. £ s. d.
700 Feet of 12-inch Pipe Sewer.						
713 Cube Yards Digging	1 9	62 7 9		1 9	62 7 9	
311 Yards Super Reinstating Paving	1 9	27 4 3		0 9	11 13 3	
700 Feet of 12-inch Glazed Stoneware Pipe	1 10	64 3 4		0 11	32 1 8	
Laying to ditto per Foot	0 3	8 15 0		0 3	8 15 0	
10 Per Cent. for Contingencies and Superintendence	0 0	16 5 0		0 0	11 9 9	
That is, 700 Feet of 12-inch Pipe Sewer laid complete	5 1¼ per Ft. run.		178 15 4	3 7¼ per Ft. run.		126 7 5
550 Feet of 9-inch Pipe Sewer.						
458⅓ Cube Yards Digging	1 9	40 2 1		1 9	40 2 1	
244½ Yards Super Reinstating Paving	1 9	21 7 10½		0 9	9 3 4½	
550 Feet of 9-inch Glazed Stoneware Pipe	1 1½	30 18 9		0 7	16 0 10	
Laying ditto per Foot	0 2½	5 14 7		0 2½	5 14 7	
10 Per Cent. for Contingencies and Superintendence	0 0	9 16 4		0 0	7 2 1	
That is, 550 Feet of 9-inch Pipe Sewer laid complete	3 10¾ per Ft. run.		107 19 7½	2 10 per Ft. run.		78 2 11½
4,130 Feet of 6-inch Pipe Sewer.						
2,294½ Cube Yards Digging	1 9	200 15 4½		1 9	200 15 4½	
1,835⅓ Yards Super Reinstating Paving	1 9	160 12 1½		0 9	68 16 7½	
4,130 Feet of 6-inch Stoneware Pipe	0 8	137 13 4		0 4	68 16 8	
Laying ditto per Foot	0 2	34 8 4		0 2	34 8 4	
10 Per Cent. for Contingencies and Superintendence	0 0	53 7 0		0 0	37 5 9	
That is, 4,130 Feet of 6-inch Pipe Sewer laid complete	2 10 per Ft. run.		586 16 2	2 0 per Ft. run.		410 2 9
General Total Expense for Special Sewers Rate	...	... ...	873 11 1½ 614 14 1½			614 14 1½
Amount saved if the Work were done by the Commissioners	...	... ...	258 17 0			

APPENDIX B.

DETAIL of ESTIMATE for Draining a House (No. 110 on the Plan), with a Cesspool under the Privy, 9-inch Brick Barrel Drains, and Cesspool Trap under the Sink in Yard, viz.: (under the old system)—

	£	s.	d.	£	s.	d.
Digging, filling, &c., for 50 feet run of 9-inch brick barrel-drain from sewer in street through house to cesspool under privy and sink in back yard, at 7d. per foot	1	9	2			
Making good floors and walls and reinstating paving, at 4d. per foot	0	16	8			
Digging cesspool and carting 3 cubic yards of earth, at 3s. per yard	0	9	0			
Fifty feet run of 9-inch brick barrel-drain and laying, at 1s. 4d. per foot	3	6	8			
Twenty-five feet superficial reduced brickwork in mortar in cesspool, at 10*l.* 4s. per rod.	0	18	9			
Slate riser and deal seat to privy, 11 feet superficial, at 7d. per foot	0	6	5			
Brick trap and sink in yard	0	12	6			
Add 10 per cent. for contingencies and superintendence	0	16	0			
				8	15	2

APPENDIX C.

DETAIL of ESTIMATE for Draining and Supplying with Water one House under the present intermittent System, if the work be done by private Builders, and at the present advertised prices for materials.

No. 110 *on the Plan.*

		£	s.	d.	£	s.	d.
or water-closet apparatus and laying water.	Emptying and filling up cesspool	1	5	0			
	Digging, filling in, &c. 4 feet run of 4-inch pipe-drain, at 4d.	0	1	4			
	Making good floors and walls to ditto, at 3d.	0	1	0			
	Four feet run of 4-inch pipe, at 6d.	0	2	0			
	Laying ditto, at 2d.	0	0	8			
	Extra upon junction	0	0	10			
	Fixing ditto	0	0	2			
	Water-closet pan with syphon	0	7	6			
	Fixing ditto	0	1	6			
	Five feet 6-inches superficial slate riser and fixing, at 7d.	0	3	2½			
	Five feet 6-inches superficial deal seat and fixing, at 7d.	0	3	2½			
	Twenty-four feet superficial slate cistern and fixing, at 1s. 6d.	1	16	0			
	Eight feet run ¾-inch leaden supply pipe and fixing, at 1s.	0	8	0			
	Eight feet run ½-inch service pipe ditto, at 10d.	0	6	8			
	Ten feet run ¾-inch waste pipe, at 1s.	0	10	0			
	Stool cock and fixing	0	3	6			
	Ten per cent. for contingencies, &c.	0	11	0			
					6	1	7
r yard sink d drain.	Digging, filling in, &c. for 6 feet run of 4-inch pipe, at 4d.	0	2	0			
	Making good floors and walls to ditto, at 3d.	0	1	6			
	Six feet run of 4-inch pipe, at 6d.	0	3	0			
	Laying ditto, at 2d.	0	1	0			
	Extra upon junction	0	0	10			
	Fixing ditto	0	0	2			
	One double trap with sink	0	5	6			
	Fixing ditto	0	0	8			
	Ten per cent. for contingencies, &c.	0	1	6			
					0	16	2
r Yorkshire ne kitchen k, with in.	Yorkshire stone sink	0	7	6			
	Fixing and making good	0	1	6			
	Nine feet of 2-inch drain-pipe, at 6d.	0	4	6			
	Digging for ditto, filling in, &c., at 4d.	0	3	0			
	Making good paving and walls over ditto, at 3d.	0	2	3			
	Laying 9 feet of 2-inch pipe, at 2d.	0	1	6			
	Ten per cent. for contingencies, &c.	0	2	0			
					1	2	3
	Total				8	0	0

APPENDIX D.

DETAIL OF ESTIMATE for Draining and supplying with Water one House under the present intermittent system, if the work be done by contract under the Commissioners.

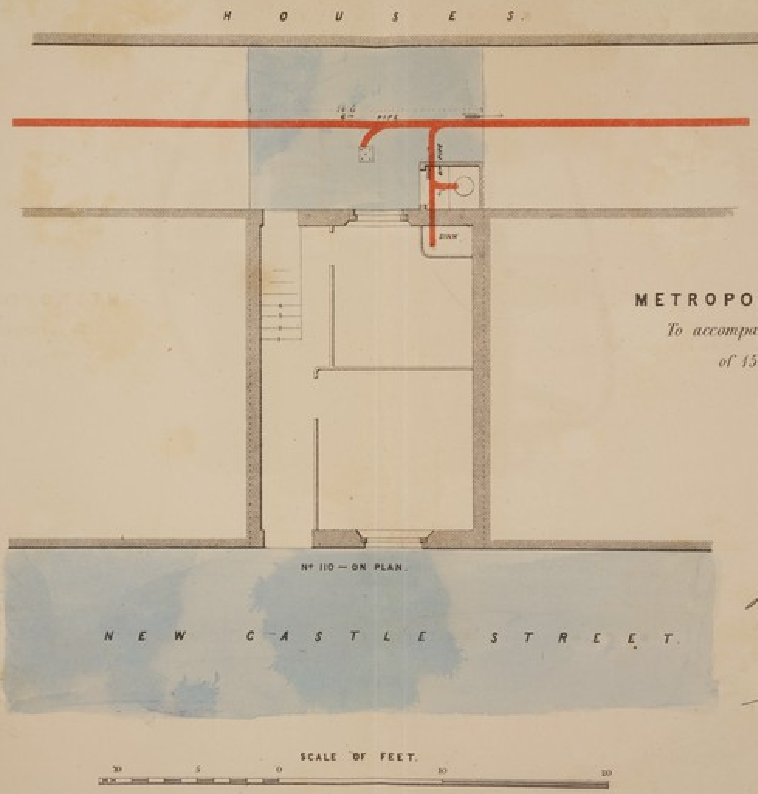
No. 110 *on the Plan.*

	£	s.	d.	£	s.	d.	
Emptying and filling up the cesspool	0	12	0				For water-closet apparatus, with laying on the water.
Digging and filling for 4 feet of 4-inch pipe-drain, at 4d.	0	1	4				
Making good to floors and walls to ditto, at 3d.	0	1	0				
Four feet of 4-inch pipe, at 3d.	0	1	0				
Extra upon junction	0	0	4				
Fixing ditto	0	0	2				
Water-closet apparatus complete, with stool cock	0	10	0				
Fixing ditto	0	2	0				
Twenty-four feet, superficial, slate cistern and fixing, at 1s. 6d.	1	16	0				
Eight feet of inch iron supply pipe and fixing, at 6d.	0	4	0				
Eight feet of ½-inch service ditto, at 6d.	0	4	0				
Ten feet of ½-inch waste ditto, at 6d.	0	5	0				
Stool cock and fixing	0	3	6				
Ten per cent. for contingencies, &c.	0	8	0				
				4	8	4	For yard sink and drain.
Digging, filling in, &c., for 6 feet run of 4 inch drain-pipe, at 4d.	0	2	0				
Making good floors or walls to ditto, at 3d.	0	1	6				
Six feet run of 4-inch pipe, at 3d.	0	1	6				
Laying ditto, at 2d.	0	1	0				
Extra on junction	0	0	4				
Fixing ditto	0	0	2				
Double trap with sink	0	3	0				
Fixing ditto	0	0	8				
Ten per cent. for contingencies, &c.	0	1	0				
				0	11	2	For kitchen sink and drain.
Stoneware kitchen sink	0	4	0				
Fixing ditto and making good	0	1	6				
Nine feet of 2-inch drain-pipe, at 2½d.	0	1	10½				
Laying ditto, at 2d.	0	1	6				
Digging for ditto, at 4d.	0	3	0				
Making good paving, &c., at 3d.	0	2	3				
Ten per cent. for contingencies, &c.	0	1	6				
				0	15	7½	
Total				5	5	1½	

APPENDIX E.

DETAIL OF ESTIMATE for Draining and supplying with Water one House under the constant system of water-supply, and of the work done by contract under the Commissioners.

		£	s.	d.	£	s.	d.
For water-closet apparatus with water supply.	Emptying and filling up the cesspool	0	12	0			
	Digging, filling in, &c., for 4 feet run of 4-inch pipe-drain, at 4d.	0	1	4			
	Making good walls or floors over ditto, at 3d.	0	1	0			
	Four feet run of 4-inch pipe, at 3d.	0	1	0			
	Laying ditto, at 2d.	0	0	8			
	Extra for junction	0	0	4			
	Fixing ditto	0	0	2			
	Water-closet apparatus complete, with stool cock	0	10	0			
	Fixing ditto	0	2	0			
	Extra on junction or joint at main water-pipe for service to pan	0	0	4			
	Six feet run of 1-inch stoneware water-pipe, at 1½d.	0	0	9			
	Fixing ditto, at 1d.	0	0	6			
	Stop-cock at main pipe	0	3	6			
	Ten per cent. on the outlay	0	3	4			
					1	16	11
Yard sink and drain.	As before in Appendix D				0	11	2
Stoneware kitchen sink and drain	As before in Appendix D				0	15	7½
	Total				3	3	8½



METROPOLITAN SEWERS.

To accompany Surveyors' Report of 15th June 1849.

John Phillips
Chief Surveyor

Edward Gotto
Asst. Surveyor

June 15th 1849

Standidge & Co. Litho. Old Jewry

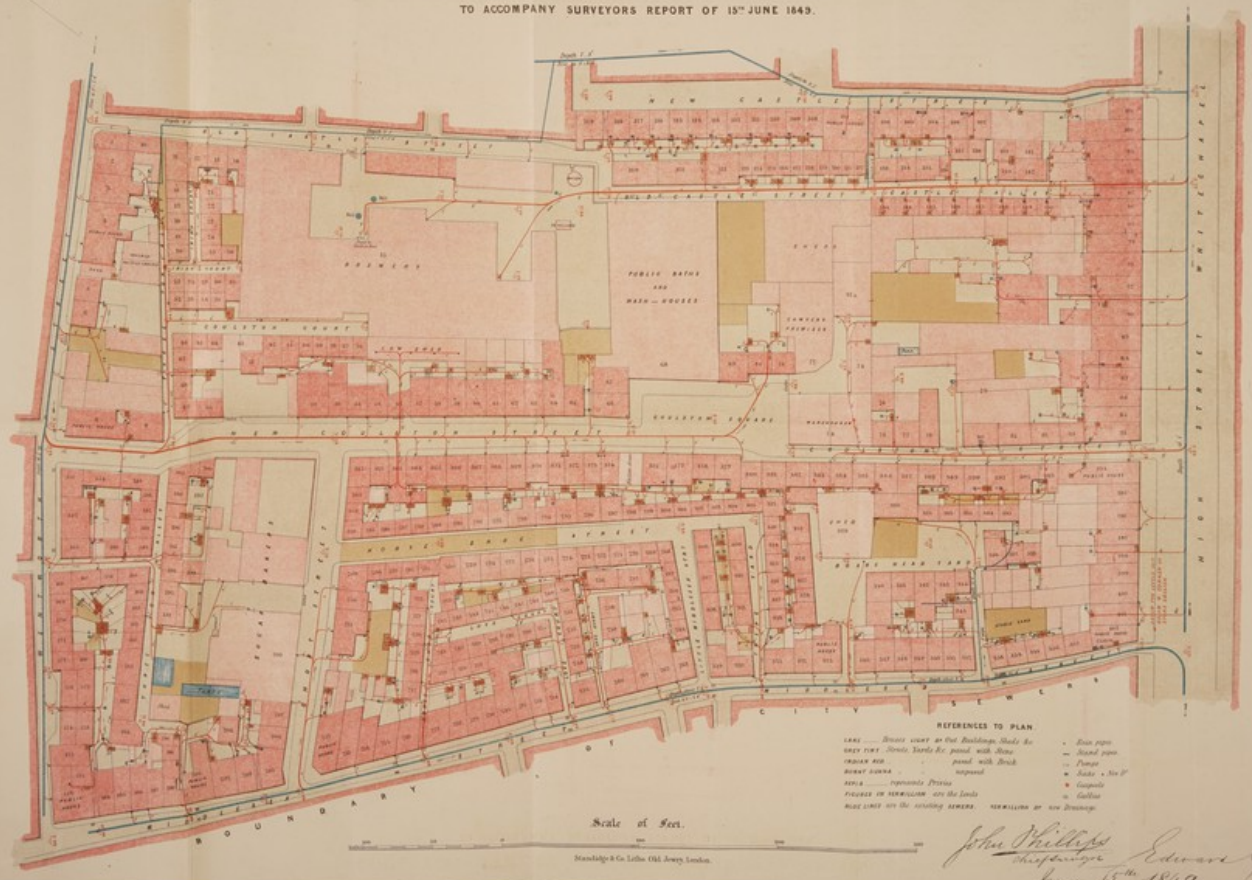
METROPOLITAN SEWERS.

PLAN

OF

COULSTON STREET AND NEIGHBOURHOOD, WHITECHAPEL.

TO ACCOMPANY SURVEYORS REPORT OF 15th JUNE 1849.



Standidge & Co. Lithe Old Jewry, London.

John Phillips
Chief Surveyor

Edward Gotto
Clerk of Surveys

June 15th 1849.

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Metropolitan Sewers.

REPORT

ON THE

DRAINAGE OF GOULSTON STREET AND NEIGHBOURHOOD,

WHITECHAPEL,

BY

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15TH JUNE, 1849.

Printed by REYNELL and WEIGHT, 16 Little Pulteney street.