

Cambridge University Press
978-1-108-06977-9 - Reports of the Late: John Smeaton: Made on Various Occasions, in the Course of his Employment as a Civil Engineer: Volume 1
John Smeaton
Table of Contents
More information

CONTENTS.

	Page
OUESTIONS proposed by the Magistrates and Town-Council of Dumsries to the con-	_
fideration of Mr. Smeaton. October, 1760,	I
Answers to the questions proposed by the Magastrates and Town-Council of Dumsrics, for	
the confideration of J. Smeaton,	2
Questions offered by Robert Maxwell of Cargin to the consideration of Mr. Smeaton,	4
Questions offered by Robert Maxwell, of Cargin, anent his work on the side of the river	
Nith, to the confideration of Mr. J. Smenton,	5
Answers to the Questions offered by Robert Maxwell, of Cargin, anent his Works on the	•
fide of the River Nith, by John Smeaton,	6
Letter from Mr. Smeaton to Mr. Simpson on the Water-Works at Halifax,	7
Estimate for the Water-Works at Halifax,	10
Proposals for building an Engine for raising water 11 feet from the well or reservoir, into	
the piece of water in the gardens of Her Royal Highness the Dowager Princess of Wales,	
at Kew, to be worked by one large or two light horses,	12
The Report of John Smeaton, Engineer, concerning the practicability, &c. of a navigable	*
canal from Wilden ferry, in the county of Derby, to King's Bromley common, near	
Litchfield; and from thence in several branches, the first leading to Longbridge, near	
Burstem, the second to Newcastle under Line, the third to the city of Litchfield, and the	
· · · · · · · · · · · · · · · · · · ·	
fourth to the river Tame, at or near Fazeley bridge, near Tamworth, all in the county.	
of Stafford, as projected by Mr. James Brindley, Engineer,	13
General Estimate for making the canals and works for compleating the navigation and	
branches referred to, in Mr. Smeaton's report, upon principles of estimation settled be-	
tween Meffrs. Smeaton and Brindley,	17
The Report of J. Smeaton, concerning the situation of the first lock upon the river Wear,	18
Estimate for the probable expence of clearing the channel of the river Wear 176 yards,	
being the distance of the situation of the sirst lock, as proposed by the Gentlemen Coal	
Viewers, above the situation as staked out in November 1760, by John Smeaton,	19
General Estimate for compleating the first lock and dam, at or near Jackson's, near Harra-	
ton, upon the River Wear,	20
Comparative Estimate for carrying on the navigation of the river Calder, by means of a long	
cut from the figure of 3 lock at F, to above Dewsbury low ford at H, and of carrying it	
partly by the river and partly by 3 short cuts as in the general plan,	ibid.
Estimate for the navigation by the long cut,	21
Estimate for the navigation as by the general plan,	21
d d	The

Cambridge University Press

978-1-108-06977-9 - Reports of the Late: John Smeaton: Made on Various Occasions, in the Course of his Employment

as a Civil Engineer: Volume 1

xxvi	C	O	N	T	E	N	T	s.				_
771 D 471 0	-						٥.	1 .11.	•		, ,	Page
The Report of John Smeat navigation from Tetney I thereof in August, 1760,	Haver	1 to L	outh,	, in th	c cou	inty o	f Li	ncoln,	from			4.0
General Estimate of the exp	ence	of m			-		-	_		to Lo	uth, ac-	22
cording to Mr. Grundy's	-		. т.	_ 	F.J	-	L	- 7-1 (C	TC.		25
The Report of Messis. Joseph concerning the present rution thereof, from the cit of the sen lands on both storing, improving, and the drainage of the said sthe expences in performing	inous y of l ides t prefe	thate Linco he fai rving nds:	and In, thick the to when	condit rough er: tog faid riv hich is	ion o Bost gether ver ar ann	of the on, to with the one of the	river o it's h pro vigat a pla	With outfapposals ion, an	am, a all into and fo nd alfo d prop	nd the inchement of for the series of the se	naviga- fea; and s for re- effecting	26
Report, -	ig til	C ICVC	iai w	oiks ic	-	шение	101	-	purpo	-		28
The Scheme for the Draina	~~		-		_			_		_	_	30
The Scheme for Navigation	•		_				_	•	_	_	_	
An Estimate of the expense	•	: 11	nroh	- ahlu a	Hand	tha a		tion o	- f the :	forcas	ing pro-	32
posed works, -	2 1114	t wiii	bron	abiy a	itcha	the R	ACCU			-	g p.0-	22
An Estimate of such works		-	:	-	001.	-		-		-	_	33
				_	-		-	Sicali	- :1: ^	- f mak	ing the	35
The Report of John Sme		_				-						
river Chelmer navigable							the	Coun	ty of .	Lucx,	nom a	26
view thereof taken the 28		•		•	•		- :	~~ ~6	Dattar	ale Co		36
The Report of John Smeat		_			_			-			ii, near	•
Doncaster, in the county											er Cata	39
Levels from the Dunn at the wood Bridge,	Cri	upiai	above	Done	ailei,	to th	e rai	ticipai	ils Dia	in, ne	a Gate-	
	l. a. 1	D - C	- 1	D:.t	-		-		-		-	40
Levels from Crookhill Noo					•	-		-		-	-	41
Level from the old Eau to C	Janu	ey Co	nımoı	19	•	-		-		-	-	42
Scheme for Potterick Carr,	! . 1.	- C	171	- 	- `	1	- :::-::::	C				4+
Estimate for draining Pott			-							•		
from Potterick Carr, by	Daidy	out-	gang	gate a	na sp	anioy	ke,	to the	river	ווווועב	, below	. 0
the engine at Doncaster,	\ \	- C1	1	•	•		! ! .	C		-	-	48
Letter from Mr. Smeaton to			•		_				AL D	- α:	- دادادا	52
Report of John Smeaton a improving the Fossidyke view and levels taken in	navig	ation	, and	•	-			-			•	
	~	•	•	_		•		•		-	-	55
Scheme for a general draina	_		_			-		-		-	-	60
The operation of the forego	_				1:	- (-b		-		-	-	63
An Estimate of the Works				-	_			F		- .:		66
Concerning the drainage of	or the	: 1010	grou	inas o	10	rkiey	and	rent	on, wi	nen a	rain by	,
Torksey bridge sluice,	1	- (21	la	_ 	- د ا	- 	×0=				ست نافاهی	69
Letter from Mr. Smeaton to						_	-		_		•	
of September, 1782, for		_		-		-				_		
river Fossdyke, and for in	ibtovi	ing th	c ora	mage c	n the	iand:	s on	each i	10 OI	the lat	· -	72 Seport

Cambridge University Press

978-1-108-06977-9 - Reports of the Late: John Smeaton: Made on Various Occasions, in the Course of his Employment as a Civil Engineer: Volume 1

CONTENTS.	XXV
	Pag
Report of John Smeaton, Engineer, upon the improvement of the navigation of the riv	
Folldyke, and for improving the drainage of the low lands on each fide of the faid rive	r, 7
The Scheme,	- 7
Operation of the preceding Scheme,	- 8
Probable Estimate of the expences of the above works,	- 8
Estimate of such works as will be necessary for the improvement of the Fossdyke navigation upon the plan proposed,	
Report of John Smeaton, annexed to a Report and Estimate of Mr. Grundy's, concerning the drainage of Holderness Levels,	ng - 8
Mr. Sineaton's examination of Mr. Grundy's plan for a sea sluice for the drainage of Hoderness Levels,	i- - 9
Rstimate of Mr Grundy's plan for a sea sluice for the drainage of Holderness Levels,	- 9
Questions proposed by Mr. Stratford, Engineer, concerning Bristol bridge, answered Mr. Smeaton,	by
Report of John Smeaton upon the harbour of Rye, in the county of Suffex,	- 9
Operation of the foregoing conftructions,	- 10
An Estimate for compleating the harbour of Rye, according to the plan and report	
J. Smeaton,	- 11
Schedule proposed to be annexed to the act for finishing the harbour of Rye,	- 1
Mr. Smeaton's Letter to Captain Pigram,	- 1
Minutes of a view of the river Went, by John Smeaton,	- 1:
Minutes taken upon the river Went, in levelling the same, from the river Dunn, at Wen	
Mouth, to Norton Mills, the 7th, 8th, and 9th of May, 1764, by John Smeaton, The Report of John Smeaton, Engineer, concerning the drainage of the low grounds	
the Manor of Womersley, belonging to Stanhope Harvey, Esquire,	- 1
The Report of John Smeaton, Engineer, upon the case of Misserton Sas and Snow Sew	
Drain, belonging to the honourable the Participants of Hatfield Chace, from a vie	
taken thereof the 14th of August, 1764,	- I
The Report of John Smeaton, Engineer, concerning the works for the defence of the lan of the Right Honourable the Earl of Kinnoul, laying upon the rivers Ammon and Ta	y,
North Britain,	- 1
Some points relative to an intended Navigation upon the river Devon, stated by Lord Cat	
cart, and answered by John Smeaton,	- I.
Queries, &c. communicated by Lord Cathcart, relative to a Navigation on the Fort	h,
November 5, 1767,	- 1
Answer to hve Queries concerning the Improvement of the Navigation of the river Fort	
from the river Devon upwards, communicated by the Right Honourable the Earl	of
Cathcart, in a Letter of November 11, 1767, to John Smeaton,	- 1.
Lord Cathcart's Queries relative to the River Devon,	- 1
The Report of John Smeaton, Engineer, concerning the practicability and expence	of
making navigable the River Devon, in the county of Clackmannan, from Mellock Fo	ot
to the River Forth,	- 15
d 2	Estima



Cambridge University Press

978-1-108-06977-9 - Reports of the Late: John Smeaton: Made on Various Occasions, in the Course of his Employment

as a Civil Engineer: Volume 1

xxviii CONTENTS	xxviii	G	Ο	N	T	E	N	T	S
-----------------	--------	---	---	---	---	---	---	---	---

	rage
Estimate for making a Navigation through the valley of the river Devon, from the Cambus to	
Mellock Glen Foot, supposed chiesty by a canal,	- 162
Summary of the Estimate for making a Navigation through the valley of the river Devon	
from the Cambus to Mellock Foot, supposed chiefly by canals,	- 163
Estimate to show the difference between keeping the river as much as possible from Tillibodic	
Dam to Sauchie new engine, and the entire canal before proposed,	- 164
Estimate for continuing the navigation, by Canal, to or near Alloa,	- 165
Lord Cathcart's Queries to Mr. Smeaton of the 11th of September, 1767,	- 166
Answer to Lord Catheart's Queries of the 11th of September, 1767,	- 167
Memorial and Queries relative to Mr. Smeaton's Report of the navigation of the Devon, o	f
the 14th of September, 1767, from Lord Catheart, the 14th of March, 1768,	- 169
Memorial of the Committee of Justices for Mr. Smeaton relative to Perth Bridge, -	- 174
The Report of John Smeaton, Engineer, concerning the practicability of building a Bridge	3
over the river Tay, at l'erth, in answer to a memorial thereupon addressed to his considera-	
tion by the Committee of Justices, bearing date August, 1763,	- 175
Estimate for erecting a Stone Bridge over the river Tay, at Perth, from the Tender at the	-
North Inch to the opposite shore; to have seven principal arches, extending 605 feet of	
inches, and in the whole length 893 feet; to be 22 feet in the clear, within the parapets,	
and to have a walking path on the fouth fide of 4 feet wide. By John Smeaton,	. 177
Extract Minutes of the Trustees for building a Bridge over the Tay, at Perth,	181
Extract Minutes of the Commissioners for the Bridge over the Tay, at Perth, in relation to	
Mr. John Gwin trying the foundation, &c. and his report, 1766,	182
The Report of John Gwin, in answer to orders by him received, and appointed to his in-	
spection and consideration at a meeting of the Commissioners for building a Bridge over	
the river Tay. February 27, 1766,	. 184
Description and Method of fixing the foundation of the second pier of Perth Bridge, accord-	
ing to the plan,	138
Mr. Smeaton's Observations respecting Perth Bridge,	
	190
The Report of John Smeaton, Engineer, upon the harbour of Christehurch in Hampshire,	
from a view thereof taken the 20th and 21st of May, 1762,	192
Estimate for the Works proposed to be constructed at the Harbour's mouth, according to	
the preceding Scheme,	198
The Report of John Smeaton, Engineer, upon a view and observation taken of the level of	
Adling Fleet, &c. from a plan of the faid level, taken by Mr. Charles Tate, Surveyor,	ı
in the year 1764,	199
Estimate for a Drainage, by a new course, to Trent Fall,	204
Estimate for making a navigable Canal from Drisseld Beck to a place called the Townsend,	1
near Skerne,	- 207
A Description of the above Plan, with a comparative calculation of its abilities with the	:
prefent work,	208
Mr. Smeaton's Examination of Mr. Gascoigne's proposals for raising Water out of Ships -	- 215
P	ropofals



Cambridge University Press
978-1-108-06977-9 - Reports of the Late: John Smeaton: Made on Various Occasions, in the Course of his Employment
as a Civil Engineer: Volume 1
John Smeaton
Table of Contents

CONTENTS.	X X1X
	Page
Proposals for laying the Ships at the quay of Bristol constantly affort, and for enlarging	
this part of the Harbour by a new Canal through Cannon's Marsh, by John Smeaton, -	218
Description of a portable Fire-Engine, invented by John Smeaton, F.R.S. at the inflance	
of the Right Honorable the Earl of ligmont, 1765,	223
Award of Messes. Smeaton and Wooler concerning Whitby Harbour,	230
Report relative to Market Weighton,	234
Description of a new Bucket for Fire Engines,	236
The Report of John Smeaton, Engineer, touching the matter in dispute between Mr. Rich	
and Mess. Waltons, concerning their mills at Thurlston,	239
The Report of John Smeaton, Engineer, concerning the power of Hubbert's Mill Stream	
to raise water,	245
A Table, shewing the quantities of water capable of being raised at Hubbert's Mill, accord-	
ing to the different heads or falls, and according to different perpendicular heights to which	
it is required to be raised,	247
The Report of John Smeaton, Engineer, concerning the practicability of erecting a Corn	
Mill, to be worked from the farm yard pond, at Worksop Manor,	248
Description of the Machine for supporting the temporary Lights to be erected at the Spurn	
Point,	252
Explanatory Remarks and Observations upon the designs for building the Light houses upon	
the Spurn Point, as approved of by the Honourable Corporation of Trinity-House, Dept-	
ford Strond, London,	254
Estimate of the expence of building two Light-houses, with proper conveniencies, upon the	
Spurn Point, as defigned by John Smeaton, Engineer, from the orders and directions of	
the Honourable Corporation of Trinity-House of Deptford Strond,	259
Additional Remarks and Observations, touching the construction of the Light houses upon	
the Spurn Point, as approved of by the Honourable Corporation of Trinity-House, Dept-	
ford Strond, London,	260
The Report of John Smeaton, Engineer, concerning the state of the Light-Houses building	
at the Spurn Point, under direction of the Trinity-House, Deptsord Strond, London, -	269
Report upon the Lower Light at the Spurn Point, by John Smeaton, Engineer,	271
Estimate for rebuilding the part of the wall of the low light at Spurn Point, that was taken	
away by the sea, and desending the same, as per Report,	272
Estimate for taking down, moving, and re-erecting the great temporary light, and placing	
the same in line of the other two light-houses,	273
Estimate of what is further necessary to compleat the light-houses at Spuin Point,	ibid.
The conclusive Report of John Smeaton, Engineer, concerning the Spurn light-houses, -	274
The Report of John Smeaton, Engineer, upon the state and condition of the low light-	
house at Spurn Point, pointing out the most likely means of preserving the same at a	
moderate expense,	276
The Report of John Smeaton, Engineer, concerning the fituation of the Mills and Bleach-	
fields at Waltham Abbey, in respect of water,	279
Report on Waltham Abbey Powder Mills, respecting navigation on the river Lea,	282
	J.Ps



Cambridge University Press 978-1-108-06977-9 - Reports of the Late: John Smeaton: Made on Various Occasions, in the Course of his Employment

as a Civil Engineer: Volume 1 John Smeaton Table of Contents More information

CONTENTS.

	Fagi
The Report of John Smeaton, Engineer, upon the state of the river Lea navigation, so	_
far as the mills abreast of Waltham Abbey Canal are affected thereby,	284
The Report of John Smeaton, Engineer, respecting the alterations made at Sewardston Mill, so far as they concern the quantity of water taken from the river Lea, as also the	
loss sustained by Sewardston mill, by an alteration made at Enfield lock in the year 1781,	287
Report of John Smeaton, Engineer, respecting the loss of grinding sustained at Tottenham mills by the leakage of the lock gates, from the year 1778, till April, 1781,	•
	290
Report of John Smeaton, Engineer, concerning the practicability of making the Harbour of St. Ive's fafe for ships in all winds,	299
The Report of John Smeaton, Engineer, upon the practicability of removing Topcliff Mills, Yorkshire, to Assenby Stream, below Topcliff Bridge, consistent with the proposed	
navigation of the river Swale,	301
The Report of John Smeaton, Engineer, upon the Harbour of Eymouth,	3:2
Estimate of the expence of building a north pier for Eymouth Harbour,	304
Method of construction of the Bridge over Stonehouse-creek, as designed by John Smeaton,	
Engineer,	306
The Report of John Smeaton, Engineer, upon fundry points relative to the Linton Dam	544
and Swale navigation, referred to his confideration by John Smith, Engineer for the faid	
works, by order of the Commissioners,	310
Proportions and directions for building the Mill at Knouch Bridge, by John Smeaton,	
Engineer,	313
Plan for afcertaining the proportional quantities of water flowing down the high stream and	
Iver stream, being two divisions of the river Coln-below Uxbridge, from whence also may	
be determined the quantity of water discharged at each place per hour,	319
Description of a Pump for the Dock at Port Glasgow,	323
Report of John Smeaton, Engineer, concerning the Water-road proposed to be carried across the valley of the river Trent from Muskham to Newark,	
Report concerning the situation of the intended new bridge over the river Clyde at Glasgow,	327
Table, shewing the measures, soundings, and observations made upon the river Clyde, rela-	333
lative to the choice of a proper place for the intended new bridge at Glafgow,	337
The Report of John Smeaton, Engineer, upon a view of the Harbour of Whitehaven, -	338
The Report of John Smeaton, Engineer, upon the rebuilding the sunken pier of Dumbarton bridge,	339
The Report of John Smeaton, Engineer, concerning the Drainage of Lewes Laughton Level, in the county of Suffex,	
Estimate for Lewes Laughton Level,	340
· · · · · · · · · · · · · · · · · · ·	350
Particular Works for the Levels west of the Ouse, below Lewes Bridge, and on both sides above, on north of ditto,	35 1
Particular Works for Ranscombe Level, and Level on the Glynde, on the east of the Ouse,	ibid,
Second Estimate for Lewes Laughton Level,	
Essimate of works to be done in the west Level,	352
Estimate for the north Brooks above Lewes Bridge,	353
• •	ibid.
Eit	imate



More information

Cambridge University Press 978-1-108-06977-9 - Reports of the Late: John Smeaton: Made on Various Occasions, in the Course of his Employment as a Civil Engineer: Volume 1 John Smeaton Table of Contents

	C	0	N	T	E	N	T	s.				xxxi Page
Estimate for the drainage of	Rani	Comb				_		_		_		
Charge of draining the east				ks eass	of R	anlco	mbe,	as alf	o tho	le of Be	dding-	353
ham, Asem, and Itsord,	,	-	• .	-				-		-	•	354
Abstract of the drainage of I			_		•				d,	-	-	355
Description of a Ship's Pump		_					_		-	-	-	356
The Report of John Smeato furnace at Carron,	n, E	ngine	er, co	oncern -	ing ti	ie Imj -	prove	ments -	of th	e Blaft	at the	359
Description of the Collar of	Leat	her to	be a	pplied	to th	e Blov	wing-	mach	ine at	Carron,	, -	360
Mess. Grieve and Benson's	Anſw	er to	Mr. S	meato	on's C	Querie:	5,		-	·	_	361
Mr. Benson's Answer to M	r. Sm	eaton	's Qu	eries,		_		-		-	-	363
Mr. Grieve's Answer to Mr							-		-		-	ibid.
Explanation for the Design				_		e Fur	nace	No. 2	, at (Carron,	_	364
The Report of John Smea	ton,	Engi	neer,	conce	erning	the	quan	tity ar		-	of the	5 ,
water at Carron, from a			there	of th	e 7th	of Ju	ly, 1	769,		-	•	3 ⁶ 7
Resolutions of the Carron C	•	•		-		-		-		-	-	375
Some Remarks concerning		_				_	ill fo	r Cylii	nders	and Gu	ns, to	
be erected upon the tail-								-		-	-	376
Explanation of the Design for		_								-	-	379
Table showing the expendit												
Smeaton's letter to the Ca	arron	Com	pany	of the	23d (of July	y, 17	76, in	anlw	er to the	eir's of	
the 14th ditto, -		-		-		•		-		-	-	38 <i>ż</i>
Directions and Observations	con	cerni	ng th	e clay	r-mill	to b	e bu	ilt up	on the	e tail-w	ater at	
Carron, -	-		-		•	•		-		-	•	iòid.
The Report of John Smeater bution of the water for va- feasons, together with the power of water to be emp	worki : imp	ng th	e Blas	ł Mac	hine	for the	four	furna	ces at	Carron	in dry	384
Table, shewing a comparati								as use	d at C	Carron,	at dif-	.0.
ferent periods, from the y A Table, shewing the expen				-				D W.C.	-	for Char	-	385
feafons, and according to				_		-					. Water	-0-
•											ے ممالیتا:ما	3 ⁸ 7
Description of the Apparatu					ion a	nu ui	ichaig	ging a	ny or	the pai	ticular	
motions for boring the G					:-~ c		aha '	- hau:-a		- Comebas	Carra	394
Explanation of the Apparatu	S IOI	noium	ig and	pum	ing i	ii wato	the	boring	bars	ior the	Catto.	6
nades without a carriage,	(harr	- •:	ha m		- -		- - eba	inalia	۔ مام ابم	wa far re	- مدائموا	396
Explanation of the Sketch,		-					s me	memi	eu pin	ne for re	icaring	
the work of the dischargi	_					ades,		-		•	•	397
Explanation of the Design s		_				¢	- 4h - /	~	- 		-	398
Explanation of two methods		_			_		tue (Carrol	iaues,	-	-	402
Explanation of the Design s				-			اد.Ω	-		1: 0		4º3
A comparative View of the S	iate (or the	Carr	on Fu	rnace	s in C	CEOU	er, 17	70, a	nd in 5	ehtem-	
ber, 1778, -		•		•		•		•		•	•	404 The



Cambridge University Press
978-1-108-06977-9 - Reports of the Late: John Smeaton: Made on Various Occasions, in the Course of his Employment as a Civil Engineer: Volume 1
John Smeaton
Table of Contents
More information

xxxii	C	0	N 7	r e	N	T S.			
									Page
The Report of Joh	n Smeaton,	Engine	er, con	cerning	g the e	xpediency	of opening	the tem-	
porary Cut and	Lock near	Dalderi	e, from	the c	anal of	Forth	and Clyde to	the river	
Carron,	•	-	-		-	-	•	•	407
Mr. Sineaton's Let	ter to the C	arron C	omnany		_	_	•	_	400

REPORTS,