Reports concerning the Light Houses at North Queensferry and South Queensferry

By Robert Stevenson

These reports are related to the removal of the original light placed on top of Signal House, to the new tower in North Queensfrerry. This was prompted by the experience of operating the light at South Queensferry which had been installed in a similar tower.

This document is a transcript of entries from the Business Records of Robert Stevenson held in the National Library of Scotland

> Reference Acc 10706/100 Pages 413 to 417 and 431 to 432

I have matched the transcript to the original documents, except where words were hyphenated and split over the end of a line.

For future reference, the next two pages are a copy of part of the index sheets from the library covering this accession.

We had previously found entries covering Stevenson's report and quotation for building a light room on top of Signal House. These were from pages 93 to 102 of Acc 10706/96, i.e. his Report Book number 1 from 1811 to 1813.

The material in this document was discovered in 10706/100, Report Book number 4 from 1816 to 1819

There is no index to book 1, but the later books start with an alphabetical index, which made research much easier!

Boyd Williamson for North Queensferry Heritage Trust, March 2013.

Acc. 10706.

Business Records of Robert Stevenson & Sons, Civil Engineers.

These papers, purchased by the National Library of Scotland, contain the business archive of the Stevensons from the late 18th century to the mid 20th century. They consist mainly of letterbooks, incoming correspondence, reports, memoranda, maps and plans, with a large number of printed pamphlets and reports by the Stevensons and others, concerning all the civil engineering works with which the family was involved. The main interest lies in the material relating to harbours and to lighthouse construction, and to the work of the Northern Lighthouse commissioners. The arrangement is as follows:

Nos 1 - 68 Letterbooks 69 - 72 Letterbooks on Lighthouse business 73 - 88 Incoming letters 89 - 124 Reports 96-124. Report Books

> etc etc

Reports

89.	Notes of voyages and travelling journal, 1798 - 1804, containing reports on the state of the Northern Lighthouses.	
90-5.	Reports on Northern lighthouses.	
20 5.	90.	1805-17
	91.	1817-22
	92.	1822-9
	93.	1830-37
	94.	1837-42
	95.	1842-53
96-124.	Report Books	
	96.	1811-13 no.1
	97.	1811-13 duplicate of 96
	98.	1813-16 no.2
	99.	1814-16 miscellaneous reports of special interest - all entered in 98.
	100.	1816-19, no.3
	101.	1819-23, no.4
	102.	1823-7, no.5
	103.	1827-34, no.6
	104.	Index to report books, 1811-34
	105.	1834-42, no.7
	106.	1842-8 no.8
	107.	1847-50 no.9
	108.	1850-53 no.10
	109.	1853-9 no.11
	110.	1859-64 no.12
	111.	1863-7, no.13
	112.	1867-71, no.14
	113.	1871-6, no.15
	114.	1875-82, no.16
	115. 116.	1880-93, no.17 Index to reports 1811 82
	110.	Index to reports, 1811-82 (also refers to printed reports Vels 1, 10, per 523, 532)
117-23.	(also refers to printed reports Vols 1-10, nos.523-532) Reports on Northern Lighthouses	
117-23.	117.	1885-9, no.18
	117.	1880-2, no.19
	119.	1893-5, no.20
	120.	1895-5, no.20 1896-8, no.21
	120.	1893-1902 no.22
	121.	1899-1901 no.23
	122.	1902-4, no.24
	123.	Index, 1834-47

4 13 So the Home The Trusteis for the Queens formy propage 5 She Report of Robert Stevenson first Ingine Relatives Gra lance Lucan fory Right house Harris Officeably to an appointment arrearged with The mas Sectland Loga;" one of the Trustees 5. Jeft for the Reveaux fory proprage the Reporter met with Leut South the Superinteredent on the 13! of Soft 1817, and having Examined the Light house on touth sides of the ferry to would Eminie. dately have Reported to the Trustees hand time permi that but he was then within a few hours of sette my off on his annual survey of the Works of the Commissions of the Northern Lighthouses the however can bommencale vitely will the Infervintendant and is news to state his opinion und Report to the Trustees. Dince the Reporter had last the Honor of Professionally addressing the Trustees of the Queen farmy peafrage their worth have extended in a wond inful dequee and the great information some effected when this important Frenny have been felt and universaly acknowladged by the public & mongs there the establishement of Lighthouses on both side of the papage has been non of the trast in print of convenience to the papage where the Reporter whom a format becaision gave his opinion with negard to the twention of these Liphthenwes and the muniter of Reflecters he stated that one Reflecter whom each side was prested the profficient for the purposes of the Honry this towever reppeared to be so structurate an allowance that some of the Trustees expressed wind.

To the Honourable the Trustees For the Queensferry Passage The Report of Robert Stevenson Civil Engineer relative Queensferry Lighthouse

On board of the Lighthouse yacht off the coast of Caithness 18th July 1817

Agreeably to an appointment arranged with Thomas Scotland Esq., one of the trustees for the Queensferry Passage, the reporter met with Lieut. Scott the Superintendent on the 15th of Sept 1817, and having Examined the Light house on both sides of the ferry, he would Immediately have reported to the Trustees had time permitted but he was then within a few hours of setting off on his annual survey of the Works of the Commissions of the Northern Lighthouses. He however can Communicate Verbally with the Superintendent and is now to state his opinion and report to the trustees.

Since the Reporter had last the Honor of Professionally addressing the Trustees of the Queensferry Passage their works have extended in a wonderful degree and the great improvements now effected upon this important Ferry have been felt and universally acknowledged by the public. Amongst these the establishment of Lighthouses on both sides of the passage had been none of the least in point of convenience to the passage when the reporter upon a former occasion gave his opinion with regard to the position of these lighthouses and the number of Reflectors he stated that one Reflector upon each side was perfectly sufficient for the purposes of the Ferry, this however appeared to be so moderate an allowance that some of the Trustees expressed a wish that

That the Reports should reacher an a lateral Continue 14124 sound on toral which he accordingly did and it is believed the single Reflector tear town found Toffining by functul the may further add that in some measure connected with the Separiment that tion yours since the Light of Just theit was attend from a Materiory to a Trending light to distinguish it from the tight on the Island of May and the Trustees will particips will be surprised to beare that such as the former of this Privatelic Reflection which and in all respects similar to there at the Ferry that the the Lights of Instakenth show only one Restriction at a time open the light is found to have a trongly luminous approximate at the Liston of from tan to twelve otheles in its former State or Maturing tight Turkheith had Medern Reflector but surve it has been made to Revolue only seven Replactor are found to be creapary only one of which in notation care be seen by the placemen the space telesen the traffect a giving the atternate that of Light and dark sele. But to actume from this dy africe the Registe Touth Freny Leptithon have to a brance that the examined the Lighthouse after The Finithen side of the Dunen Ferry and finiste went to all South the Respecty of tearing it complitely. cleaner and perinter and otherwise furt in order before the Commenceing of the lighting Jeason the Tower and Lightroom here are found to answer very well copion the small reals in which they are constructed but the adjuising operationent is but all adupted wither for the accommodate. which seems to be necessary for the Surperen tondent and treatmen in for the stire and appendes for heating the Lybbours which is indestromable during the firsty weather of winter in the onean times the Reporter tias printed out certain alterations in the firstern of store and the direction of the smith twites which is tosted will be allende with some advarilage without occarrining any additional

that the Reporter should make an actual Experiment or trial which he accordingly did and it is believed the single reflector has been found sufficiently powerful he may further add that in some measure connected with this Experiment that two years since the Light of Inch Keith was altered from a stationary to a Revolving light to distinguish it from the light on the Island of May and the Trustees will perhaps be surprised to learn that such is the power of the Parabolic Reflectors which are in all respect similar to those at the Ferry that tho' the lights of Inchkeith show only one Reflector at a time, yet the light is found to have a strongly luminous appearance at the Distance of from ten to twelve miles. In its former state as stationary light, Inchkeith had thirteen Reflectors but since it has been made to revolve only seven Reflectors are found to be necessary only one of which in rotation can be seen by the observer the spaces between the reflectors giving the alternate effect of Light and darkness.

South Ferry Lighthouse

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But to return from this digression the Reporter has to observe that he examined the Lighthouse upon the Southern side of the Queens Ferry and pointed out to Mr Scott the Necessity of having it completely cleaned and painted and otherwise put in order before the Commencing of the lighting season. The Tower and Lightroom here are found to answer very well upon the small scale in which they are constructed but the adjoining apartment is but ill adapted either for the accommodation which seems to be necessary for the Superintendent and Boatmen or for the stove and apparatus for heating the lightroom which is indispensable during the frosty weather of winter. In the meantime the Reporter has pointed out certain alterations in the position of stove and the direction of the smoke tubes which is hoped will be attended with some advantage without occasioning any additional

to fine to the Transfers or drange when the external approximite of the building trut when it formed Conve minist to afford the official persones and Brotherson an accompetations on the Fourtherne side some what consider to the conconcideres state of thisgs of the Hat Herry this in the dance with equal advantage with met any - treatistal incommencing to the Duray on tanding felacer. The Arefortor Traving Examined the Southern A Hildeny to the fine Fight the onen Jourcease to notice the Sight houses on the Northern side of the Ferry and is faustic wharty to motice the proposed meneral of the Lightower from the Platform wet of signal Tower to the model times just exected for it in a line with the finiscited handing hier When the Refeater originally gave this aprove about the firster, of the Liptilarm when the most side he pristed went the top of the Stan care as the most proper site for the Lightown in Concerte on with signal tower as almost commical and effectival for typting the papage But accords the Firmy the Lightmoin trouver attensately after The Plat forme wanter of the Flair care but it more apprours that buth of there trigher fuse times are found to be tops to everally uneful Then the triver Seteration new proposed which is well adapted for ty thing both nonfo the Fanny and along the Fier aconvenency of me importance to hafrangen in going on toard or converg as have from twots the hvint on which the Reports - uside stands the is chiefly called to give his epinion is wither it would be must advessable to fiture a new Fighter com when the star tower in to werning the present lights avon from the platform of the Signal time and erest it when the over tours were

415 Expense to the Trustees or change upon the external appearance of the building but when it found convenient to afford the official persons and Boatmen an accommodations on the Southern side somewhat similar to the commodious state of things at the North Ferry this can be done with equal advantage without any material inconveniency to the Quay or landing places.

North Ferry Lighthouse

The Reporter having examined the Southern Light, he now proceeds to notice the Lighthouses on the Northern side of the Ferry and is particularly to notice the proposed removal of the Lightroom from the Platform roof of signal Tower to the small tower just erected for it in a line with the principal landing pier.

When the reporter originally gave his opinion about the position of the Lightroom upon the north side, he pointed out the top of the Stair case as the most proper site for the Lightroom in connection with signal tower as most economical and effectual for lighting the passage boats across the Ferry the lightroom however ultimately upon the platform instead of the stair case. But it now appears that both of these higher positions are found to be less generally useful than the Tower situation now proposed which is well adapted for lighting both the across the Ferry and along the Pier, a conveniency of no importance to the passengers in going on board or coming ashore from boats. The point on which the reporter understands he is chiefly called to give his opinion is whether it would be most advisable to place a new light room upon the New tower or to remove the present lightroom form the platform of the Signal tower and erect it upon the new tower were this

416 Thes gevertern first to the Reporter merely as a cheer of economy he would state it as this openion that it would be letter to allow the firesent Light room to remain on the Jegrant normande exect a new Light source where the in tower but when he takes into account that the Fight own neally disfigured The hundren appendence of the Fignal towner word that the must of cast in and white connection with it must have a considerable shain. a from the Walls of the Building and also that The two surps of bopper and lead become me Tonger excepting he has no terrelation in neum mending the intine versional of the Lyliter and its connecting apparates and thereby northe The Figural Town to sto or genul State of Eligance agreeably to the Alan of the Directiled the men fronter of the Lightroom on the on them side of the tarmy will must be so commanding a that as it never tras report the Figural Tower it will Towever te seen with Faifficient effect even To one the I moting filuce propered to be exceled to the mesternal and well arouver a much hetter furtions as toperence for tighting the Pier By the treneweal of the Sightieven from the tip of the Figure Tower a considerable quantity of East from and boffer will remain which will not be applicable to the men twilding with regard to the Cast iron tais they are hardly with the carraige to a distance for sale and therefore it would to advisable to lay themavide for the prevent as they may furtures come into use in for ing the woof of a stade connected with the fires While the old Coffee will felch its fince in frayment at the serviced of the Tyltsoon part of the old Coppen should be affilier for making men s moke takes for the Stores for heating the Lightenen on both Side

this question put to the reporter merely as a measure of economy he would state it as his opinion that it would be better to allow the present Lightroom to remain on the Signal room and to erect a new Light room upon the New tower but when he takes into account that the Lightroom really disfigured the handsome appearance of the Signal Tower and that the mass of the cast iron and copper connected with it must have a considerable strain upon the walls of the building and also that the two roofs of copper and lead become no longer necessary he has no hesitation in recommending the removal of the Lightroom and its connecting apparatus and thereby restoring the Signal tower to its original state of Elegance agreeably to the plan of the architect. The new position of the light room on the Northern side of the Ferry will not be so commanding a station as it now has upon the Signal Tower it will however be seen with sufficient effect even from the Landing Place proposed to be erected to the westward and will answer a much better purpose as Experience for lighting the Pier.

By the removal of the Lightroom from the top of the Signal tower a considerable quantity of Cat Iron and Copper will remain which will not be applicable to the new building. With regard to the Cast Iron bars, they are hardly worth the carriage to a distance for sale and therefore it would be advisable to lay them aside for the present as they may perhaps come into use in forming the roof of a shade connected with the piers. While the old Copper will fetch its price in payment at the removal of the Lightroom, part of the old copper should be applied for making new smoke tubes for the stoves for heating the lightroom on both sides of

of the Formy as bopper is much more suitable than for this furthere. The Reporter has attended to the movie frefer by all " south for heating the new by there and Through the cannot altogether approve of it yet in the Marconny of the Building has been forfund for meeting this there when the motifiest it may be as well to allow the trace to be made during the envery wenter for as things now stand it will not be attended with a additional expense and of I she to be found esserging to make an alleration in this respect the Refunctes has communicated his ideas to all " Scott upon the subject. Alteretion These alterations and refinis should be gone should be about without loss of time as the searce is for munde advanced and tristerous weather in such enfor situations is ill mited for operations connected with the business of the Printer and glagier

417 of the Ferry as Copper is much more suitable than for this purpose.

Heating of the Lightrooms	The Reporter has attended to the mode proposed by Mr Scott for heating the new lightroom and though he cannot altogether approve of it yet as the Masonry of the Building has been proposed for meeting his Views upon the subject, it may be as well to allow the trial to be made during the ensuing winter, for as things now stand it will not be attended with additional expense and if it should be found necessary to make an alteration in this respect the Reporter has communicated his ideas to Mr Scott upon the subject
Alterations should be made	These alterations and repairs should be gone about without loss of time as the season is far

about without loss of time as the season is far advanced and boisterous weather in such exposed situations is ill suited for operations connected with the business of the Painter and Glazier.

031 Mannandum for the Revenson expending the Proposed Light white he Jung Ar Stevenson is awaw that the Light is montheat for Sponspored by hight to the pope age, who goin ight to the Pin altouthquensfing. Byou reputy where The Lifter ought to be placed. it will thousand befor him to consider and to determine whither in and threats complete attained completely by our fight, the shif diet but gaughte me the hapage or on the fire There are three promechal for heland on the South side, at fong bing takes and host boyan, and it is drived, that its Halls will continue the chief finding place on the South side. On The sunt order The fanding places are at the Better Mathqueeneferry and long chain the dassar get motion. It is doubtful whether when The last is exected, the chief finding the will be at that however sprong which is to he canned out st feet faither than its friend earth The situation of these fins will make Mer Mexandon to decide, it what for the landing place for fighting the paper ingthe he be placed. An case Mr Her enson thinks, That the sent fight on the Signal House or highling the papage as well as at the point, it will be neupary for . what have the inconvenience which Mr Velter Co

Memorandum for Mr Stevenson regarding the Proposed Light at North Queens Ferry

Mr Stevenson is aware that the light is wanted for purposes to give light to the passage and to give light to the Pier at North Queensferry. Before reporting where the light ought to be placed it will therefore be for him to consider and to determine whether in case both objects cannot be attained completely by one light, the chief object be to give light on the passage or on the pier.

There are three principal landing places on the South side, at Long Craig, New Halls and Port Edgar, and it is obvious that New Halls will continue to be the chief landing place on the South side. On the north side, the landing places are at the Battery, North Queensferry, and Long Craig, this last not yet erected. It is doubtful whether when the last is erected the chief Landing Place will be at North Queensferry which is to be carried out 44 feet further than its present end.

The situation of these piers will enable Mr Stevenson to decide at what point the landing place for lighting the passage

ought to be placed.

In case Mr Stevenson thinks that the present Light on the Signal House will answer for lighting the passage as well as at any other point it will be necessary for him to report how the inconvenience which Mr Scott

solt the Particiand and ant, has filled 432 the mode of managing that sight a continueds it will also to may sy for the Revension to report, how the him may be lightast must commently and abonomisally, the housest light Jaing found quete empit for that forme In fine, Mr Housson's openion requested on this print, whither the happage and him can be lighter by one ght on Matigu uns ferry him, and of This opinion the in the affirmative - when ought the fight to be placed. - if his fin ion the in the negative, by what lights can the papage and him be more and demonically highligh Signal House }

The Superintendent has felt from the mode of managing that light may be removed. If the present Light be continued, it will also be necessary for Mr Stevenson to report how the pier may be lighted most conveniently and economically the present light being found quite unfit for that purpose.

> En fine, Mr Stevenson's opinion is requested on this point, whether the passage and the pier can be lighted by one Light on North Queensferry pier and if his opinion be in the affirmative, - where ought the Light to be placed – If his opinion be in the negative, by what lights can the passage and pier be most and economically lighted.

Signal House 4th Nov 1817

20.00 So the Irmsters for the noferry Paling Report of Robert St. no latio to the Dight hours 1 at Par ferry The Reporter aprecently by cam to Musit bigt of dem Alehoter on tenting of the hiro ta liqual-hunder at Nolligen und forig rat with the Are Acres mote la fase mat att. + alcourt heads by ball of the Reyal Any, and the Parts the Secul vitation to the house Courses. by all of Month's South has Betweeting also received the impired from the husters for this done tim Sion in Defecting afron the subject of the first providion for this gog to Porce days afternands having Jakin place between Nor the and Professor desties, on The Sulpict ofthe fifting lights, the Person have the have to wait afree hallsoppor when the Consulat good terro an conventent The stary and examine the form of the dights; and will his ing. suggestions fully in them, the following Saturent and Report is arran infor It may be motional generally pre fils that there are is to provent out doone how land on Simition Vooke, by which the hornes may them his relation with Arrow. Harbour lights array be considered as of two Hends the part for showing the function of the fun heads a not for dearting the depth of water

To the Trustees for the Queensferry Passage The Report of Robert Stevenson Civil Engineer, Relative to the lighthouses at Queensferry

Edinburgh

24 Dec 1817

The Reporter agreeably to an appointment arranged by James Stuart Esq of Dunearn attended a meeting of the trustees in the Signal House at North Queensferry on the 4th Nov 1817, and having met with Mr Stuart and Mr Scotland of Luscar, and attended to various observations made by Captⁿ. Mowbray of the Royal Navy, and Mr Scott the Superintendent relative to the position of the Lights of North and South Queensferry, when the Reporter also received the prefixed memorandum from the Trustees for his direction and instruction in Expanding upon the subject of the best position for these lights.

Some days afterwards a conversation having taken place between Mr Stuart and Professor Leslie, on the Subject of the Queensferry Lights, the Reporter had the honor to wait upon the Professor when that learned gentleman consented to visit the Ferry and examine the local situation of the Lights, and with his ingenious suggestions fully in View, the following statement and Report is drawn up

It may be noticed generally of <u>sea lights</u> that their use is to point out some head land or sunken rock, by which the mariner may know his relative situation. <u>Harbour</u> <u>Lights</u> may be considered as of two kinds the first for showing the position of the pier head, or not for denoting the depth of water

134 at the entrance, for the information of the Pelet. The second is perhaps a new application of a light house, and adapted to the steping form for Beat Pur of a ferry, for the landing of groots and Papergons at all hime. of bids, when the light mouth be as placed as to serve both as a direction for the hapage, and also for onlightening the Boadway on an uservay of the Pair & Thereby Emstering the homeportation I hapengers and goods more safe and commenteres, especially in dark and stormy weather. it is to this last de mightion of light that the Populies attentions as now direction question is, What is the best hailin for the light at the Northgenen fary. folk for indicating the carnes apopuy. when heats and for illimonating the landing for the accommedation of popular , on the bier surving sugat. 20 al for If the question hast I am agilation de nover as to the position of lighthrow for the bringit of this years, the lipste should have reason and see the afthe at Now teally to have been placed and the Southern, andered of the Northern order of the faither exact on to have accupied about so fait on lingth of the shable and ground on front fit immediate by jouring the western Gable of the Som of Acon Hall. Othis he thinks would have been the most sintally clace for that fights and for a Small apparlant for the Paperintendond and place of shilter SC

at the entrance, for the information of the Pilot. The Second is perhaps a new application of a Light-house, and is adaptable to the sloping form of a Boat Pier of a ferry, for the landing of goods and Passengers at all times of tide, where the Light must be so placed as to serve both as a direction for the passage, and also for enlightening the Roadway or causeway of the Pier and thereby rendering the transportation of passengers and goods more safe and commodious, especially in dark and stormy weather. It is to this last description of light that the Reporter's attention is now directed and the question is, What is the best position for the light at the North Queensferry, both for indicating the course of passage of the boats, and for illuminating the landing for the accommodation of passengers walking on the pier during night.

South Ferry Light If the question had been agitated <u>de novo</u> as to the position of Lighthouses for the benefit of this Ferry, the Reporter should have recommended the lighthouse at New Halls to have been placed upon the Southern, instead of the Northern side of the public road or to have occupied about 20 feet in length of the stable and ground in front of it immediately joining the western Gable of the Inn at New Halls. This he thinks would have been the most suitable place for that light, and for a small apartment for the Superintendent and place of shelter

Whether for the bostomen By this ments all the purposes of fighting the happy a the pin mould have then my come manne as at present, while strong light would have bus throwing Mu further courts which would have be a very quest convencency and accom station to the hory. Were this seem only to the extent of funning and glagons the bonnant evers of the formant fighter, according to an idea of Profiper herbis, of a double reflector from one horner and by this means threaving advice fillingen Mr Justic Read the advantage connection with such a plan would be considerable, With regard to the cheation a high of the Lighthouse on the Sauthern since of the fory, The Staparton is of dimension it is sufficiently high for the distance any the bory at which at is required to be sur The only mestaves for eleveling on lattering about the level of the sea are in order that it may be seen by an observer at a ficial distance, and give homens warming to the Alarman on that erome to mation to the Vair may & me it must be obvious that the more the life is afreen a level with the eyes of the stren The mene direct and lip shage the rays of fight be, while a low lifts is much more a 10.10. for the stoking frees of a Boat to boom An early operation of the Hont the North Toustus was, be exect a Signal Time with aportments for the Infriend and X boutoness on the Arithman seele of the terry, and the start regulation of the backmen enconjunction with the superovenants of The Handing places, soon bringht the prompts Freder SC)

for the Boatmen. By this means all the purposes of lighting the passage and the pier would have been answered in the same manner as at present, while a strong light would have been thrown upon the public road, which would have been a very conveniency and accommodation for the Ferry. Were this done only to the extent of opening and glazing the dormant sides of the present lightroom, according to an idea of Professor Leslie's, of a double reflector from one burner and by this means throwing a strong light upon the public road the advantage connected with such a plan would be considerable.

With regard to the elevation or height of the Lighthouse on the Southern side of the Ferry, the reporter is of opinion that it is sufficiently high for eth distance across the Ferry, at which it is required to be seen. The only motives for elevating a light much above the level of the sea are in order that it may be seen by an observer at a sufficient distance, and give timeous warning to the Mariner or that some intervening obstruction to the view may be overcome, for it must be obvious that the more the light is upon a level with the eye of the observer the more direct and less oblique will the rays of the light be; while a low light is much more commodious and suitable for the opposing piers if a Boat harbour.

An early operation of the Hon. the North Trustees was to erect a Signal Tower with Ferry apartments for the Superintendent and Light boatmen on the Northern side of the Ferry and the strict regulation of the boatmen in conjunction with the improvements of the landing places soon brought the promptitude

he to and safety of the hapage at lines 436 pary into such afout dein with the histic that the deves in a few years are antes to about in hims their former received, and this farry bearing The result and only of a more viscoly extracted sampe of papergens, in the course of havelling, but was also much since frequently Ventered afra under night. It therefore soon appearant that a highthrouse separa which winds of the Faith wand metalliensably nessfarry the tousters never dingly assolved strong blacing the light you the most ferry in the first anderes express the life of the degual domen but after a break of several years it was and found for another the purpose of liplang both the free and the paper The defeats of the light in a dight for sition more not as fully conductioned, milt de advantages decovered mutil a our light was realed afrom a comparatively for Tower on She southern side of the torry. when it is believed the disasting so of the higher detrotion were almost universally action hoped. This has allimetaly led to the meeting of ones Town in the Anther side of the trong cimelar beth on form and in high above the level of the two with that aform the Southern site. Some merer: similing however having arises gooding the prestion of the like at the bigt evaler and of this firs by the Boatmer forestrong a depicently on approaching the firs in the proper time of its shinding it accurate to some of The Fristus that this matter should

and safety of the passage at Queensferry with such reputation with the public that the dues in a few years amounted to about ten times their the resort not only of a more widely extended range of passengers, in the ordinary course of handling, but was also much more frequently ventured upon under night. It therefore soon appeared that a lighthouse upon each side of the Firth was indispensably necessary. The Trustees accordingly resolved upon placing the light for the north ferry in the first instance upon the top of the Signal house but after a trial of several years it was not found to answer the purpose of lighting both the pier and the passage

The defects of the light in a high position were not as fully understood, or its disadvantages observed, until a new light was erected upon a comparatively low tower on the southern side of the Ferry; when it is believed the disadvantages of the higher situation were almost universally acknowledged. This has ultimately led to the erection of a new Tower on the Northern side of the Ferry similar both in form and in height above the level of the Sea with that upon the Southern side. Some inconveniency however having arisen regarding the position of the light at the high water end of this pier by the Boatmen finding a difficulty in approaching the pier in the proper line of its direction, it occurred to some of the Trustees that this matter should again

again be haugh ander the conside of the Reporter a hours of the propress of It has been serbouilled to the Rep. That the long brong on the mothers diale of the Firing may ultimately come to be the principal landing filace and in this want it will be necessary to exect an additional light althis portion; and fin schuation of such anes The commanding And all free which shortens the haf age it must be stores that the long braig boulde become the chief landing place show the northered of the berry. One thing however - must be ress and so him What the somewhat the there als atale of The meant northquessiony dartow, mus under it always an eligithe situation for a landing place. How also it may be proper for the Reporter de observe, that although the spirt of the husters is ned ing varenes landing places, is that the put the may dance a place to which the loats can Sovie in declares a made artheat on a king a lack yet when this motter is eightly consistened it is stress that this array mont of Various landing place be particularly macepany export non as this has already been canneld with effort on the Coulder sale, when Them forer familing places are already for enolest, and may be considered as as my divergent promits from the mostly newspay it is Arriver that boats may either sail to a pour this central point to me a the 4100

again be brought under the consideration of the Reporter in terms of the prefixed memorandum

It has been submitted to the Reporter that the Long Craig on the Northern Side of the Ferry may ultimately come to be the principal landing place and in this event it will be necessary to erect an additional light at this position; and from the commanding situation of such an extended pier which shortens the passage so it must be obvious that the Long Craig would become the chief landing place upon the north side of the Ferry. One thing however must be remarked here that the somewhat sheltered state of the present North Queensferry harbour must render it always an eligible situation for a landing place. Here also it may be proper for the Reporter to observe, that although the object of the Trustees in erecting various landing places, is, that the public ,may have a place to which the boats can sail in adverse winds without making a tack; yet when this matter is rightly considered it is obvious that this arrangement of various landing places, can only be particularly necessary upon one side; now as this has already been carried into effect on the Southern side, where no less than four landing places are already provided, and may be considered as so many divergent points from the North Queensferry it is obvious that boats may either sail to or from this central point to one or other of

of the opposite handling places 438 area versais in This View Therefore the erection of a fire at the long braig on The most have on de of the paperage many he considered as a more distinct office This however it would be very descrethe undertake when the funder will add. mut; because by this means the help you would be reduced to about half a mile accords from pier to fier. When this plan comes to be acted whom, the opportunit of the removal of the spiklander from one place to the other, were scarcely lobe regarded as an obstacle . It is well for that in the stan and addition, of lighting The fire as well as the pop age this cannot otherwise the effection than by having a light at each principal Lundingplace him an station to be used bet night Four if a light were established at The Long loving on the most and , it my de to arreade testimety aspection a with the lights and the Forth Parry and a derection for the daugerous work all. South called the Beamers in adjacasta That additional tansfree filmentes 13 regard to the position of the "I Light hower, on the lope of the Signal Horse has consistened the effect The Reporter toos Righed so for do war aris rouge of night down whom the firer, Igas The Martrade of the Signal House, and g the lafted on alligon surschion for the v revere carried lo or en ap the others and and some an kerned high The hight could not be acherouse of the Shadow of the Bourder. While this plan with

the opposite :landing places and vice versa; in this View therefore the erection of a pier on Long Craig on the northern side of the passage may be considered as a mire distinct object. This however it would be very desirable to undertake when the funds will admit; because by this means the passage would be reduced to about half a mile across from pier to pier. When this plan comes to be acted upon, the expense of the removal of the lighthouse from one place to the other, were scarcely to be regarded as an obstacle. It is well known that in the plan, now adopted, of lighting the pier as well as the passage, thus cannot otherwise be effected that by having a light at each principal landing place pier or station to be used at night. Even if a light were established at the Long Craig on the north side, it might be made extremely useful, in connection with the lights at the North Ferry, as a direction for the dangerous rock called rock called The Beamer; in approaching that additional landing place. No 13

Recommends the removal of the Light

With regard to the position of the Lighthouse, on the top of the signal House the Reporter has considered the effect of an inverted Reflector for directing the rays of the Light down upon the pier, by raising the staircase of the Signal House, and giving the reflector an oblique direction but still unless the stair case were carried to an inconvenient and awkward height the Light could not be relieved of the shadow of the house. While this plan would

at the same forme again a decorrol tellet 434 for the now of the papage. The Reporter has therefore no her fation is recommending the removal of the Alytherrow from the Lopoftan Jequal house to the new Town lately meter for its reception al the high water and fit pin where its will not only fully light the fin ful in a great measure and are the finition of the papay , meanly as well as in the locant Justice. Indered the only dater tim to its influence being as general as an thecent misig from the populion of the liqual house, the however does not forward it ting aren at the Canaling place of Part Bogan; and even this the histor to the few palsage of the light will be Immothe advantage by the Beatmen, who will Phenety Timor Their celativo actuation by this means, in regarde to the Beamer North, when They happen to be in that quarter working a Mapage with an alloude tornal. hading of the meeting of the Trusters afor the light to Arow it was Statist by light tow bran " That encommines about even haganac attended the opportuning the low water more of these dansing his from the alifactly open could in applicationing them preserve done got reducer with only a single light at the dight water ends of them. The lapt was then for I fimin, that it avoided bidreyboy to have the fight if popul to removed to I the opposite on low water extremities ofthe friend expredively. But from the Motoring on Ametion of all Boalfrier, it mush to Aring that the fight on that setuction contains to approached at flood have by the gillery without a work of great may retuded second Reflector available to found inde

at the same time require a second reflector for the use of the passage. The Reporter has therefore no hesitation in recommending the removal of the present lightroom from the top of Signal House to the new Tower lately erected for its reception at the high end of the pier, where it will not only fully light the pier but in a great measure answer the purpose of the passage, nearly as well as in the present position. Indeed the only obstruction to its influence being as general as the present arises from the position of the Signal House; this however does not prevent its being seen at the Landing place of Port Edgar; and even this obstruction to the free passage of the light will be turned to advantage by the Boatmen who will thereby know their relative situation by this means in regard to the Beamer Rock, when they happen to be in that quarter working on passage with an adverse wind.

Leading Lights

At the meeting of the Trustees upon the 4th Nov. it was stated by Captⁿ. Mowbray that inconvenience and even hazard attended the approaching the low water end of these landing piers from the difficulty experienced in ascertaining their precise line of direction with only a single light at the high water ends of them. The Captⁿ. was therefore of opinion that it would be necessary to have the Light, if possible, removed to the opposite, or low water extremities of the piers respectively. But from the sloping construction of a Boatpier, it must be obvious that the light in that situation could not be approached at flood tide by the Light keeper without a risk of great magnitude and still a second Reflector would be found

2210 proceedly needpoing for hypling the his In this case the enquires plan reion mendud by Parfejor Lestie and al ready alterder to in this respect my of thehe have been found assful glowing Replactors so printed the one south fin and the other down which on burner could be made to illuminate both, but Still the form afele of the ten; ding light as recommended by bapt Membrary and non in braction at the South firey would be found furforthe for the war of the first as the boatmen on a short a papage make little use of the Marines Compose with two lights placed. The one at high water end and the other strutthe middle of the fire, or between high & how notion marths, a out of form the list popular direction for the Boat over both on the paperge and in approaching the price. The second on tracking light on the mostly winte any the mante a some what more considerable object so as to under important and to the report in general, form at more prominent Just town in the devection of the free which estends considerably beyond The soluction of the signal house, With an vace to the best popula averageoment of the plan of the leading light for the north tarry in convertion with this recent new fire, it would be profer Jafor the commencement of the hidding Amaternes now in View, to have the plan fully considered that the work may be proceeded with as a whole and to the bush advantage but homen

indispensably necessary for lighting the pier. In this case the ingenious plan recommended by Professor Leslie and already alluded to in this respect xxx xx here have been found useful of having Reflectors do pointed the one up the pier and the other down which one burner could be made to illuminate both; but still the principal of the leading light as recommended by Captⁿ. Mowbray and now in practise at the South Ferry would be found preferable for the use of the ferry as the boatmen on so short a passage make little use of the Mariners Compass and the two lights placed the one at high water and the other about the middle of pier, or between high and low water marks, would form the best possible direction for the Boatmen, both on the passage and in approaching the pier. The seaward or leading light on the north side may be made a somewhat more considerable object so as to render important use to the passage in general, from its more prominent position in the direction of the pier which extends considerably beyond the situation of the Signal House

With a view to the best possible arrangement of the plan of the leading light for the north Ferry, in connection with this new pier, it would be proper before the commencement of the building operations now in view, to have the plan fully considered that the work may be proceeded with as a whole and to the best advantage

Signed Robert Stevenson

Observations Estation to the Lift. 441. muse fahrens leport ashie. It the request of Sames Aust tig of Down as > Docempromist der Peren him on Patanday the 6 But the mohert geory, and the most of gighting that have We visited the several fronts daring the and had betterion an dependenty file The effect of the lights after might fall. Having enner proverse with attention in Marmonis while Report, I find the client it and a side and my own on the whole with those which Now at that to form, after accounting all The services berness of the case. But Justan it may be proper to notice has wither hash culais on which the Horenson has bedien routy in condary ghave 1the principal higher should moderate coloulated for eleminating the pion againsting the papergers wither in amberting or landing It should therefore to placed on an elisates Istoration & above The highwold mark Ret the territe may the acceptable and trat constantly hourses . The light or segnal house at the hold Fury chicald therefore to recover to the new building anaturel for it at the whom part ofthe pring lownal it might be adviseable & tring , light at Newhalls about the Irea as ho he illamomate the otherts a wall as the going I the inter part of the firm on both views of the Forry is at forward very imperfectly lighted, ming to The great langth of the Liney & the extreme other of the rays shit for the distant from paperness much Broughow an landing all might which further a by the approach glass that much the - Am Replactors were he be adopted, Jahoulat have headeder thousand on may, souther of Parparololia shape. The form of an hyper & haven for

Observations relative to the Light house of Queensferry by Professor Leslie

At the request of James Stuart Esq of Dunearn, I accompanied Mr Stevenson and him on Saturday the 6th Dec to inspect the position of the piers on both sides of the Queensferry, and the mode of lighting that passage. We visited the several points during the day and had likewise an opportunity of seeing the effect of the lights after night fall. Having since perused with attention Mr Stevenson's able Report, I find the views it contains coincide, on the whole with those which I was led to form after examining all the circumstances of the case. But perhaps it may be proper to notice two or three particulars on which Mr Stevenson has bestowed only a cursory glance.

1st. The principal Light should no doubt be calculated for illuminating the pier and guiding the passengers either in embarking or landing, It should therefore be placed in an elevated situation and above the high water mark that the lamp may be accessible and kept constantly trimmed. The light on Signal House at the North Ferry should therefore be removed to the new building erected for it at the upper part of the pier, and it might be advisable to bring the light at Newhalls also to the Inn so as to illuminate the street as well as the guay. 2nd The outer part of the pier on both sides of the Ferry is at present very imperfectly lighted owing to the great length of the Quay and the extreme obliquity of the rays shot from the distant lamp, passengers must therefore encounter much danger in landing at night, which further augmented by the offensive glare that meets them. If new Reflectors were to be adopted, I should have no hesitation therefore in recommending, instead of the parabolic shape, the form of an hyperbola

1/12 whose asymothes deverge chan angle of so or is degreed . - But shanles such arbunge to thought connects any the present affector might be made to and are an The same function by lowering the axis stepres and bringing the Barner mean the bottom . as to sende a spreading finail of fight that will shike The ground at a small the trigenty 3ª Acommon lamp placed at low water marke, may purhaps be confirment for directing the Brotomer. But it mybe also to shade to aprist in lighting the courts part of the fire. A should Therefore recommende a longer wiek or humer than ordinary & behind a small mitalie lifterton perhaps 80% inches wide and in Manha gel a lind of Brit inches. By this arrange. mont the lawys would be easily sun Jurn the opposite side of thepapery, while it would quick the papangers in tonday by throwing a tellerably a livia hight she it is most wanted, in and file distant principal Reflector digned John fishi an 8 Jan 2 1818.

whose asymptotes diverge at an angle of 10 or 15 degrees. – But should such a change be thought unnecessary, the present Reflector might be made to answer nearly the same purpose by lowering the axis 5 degrees and bringing the burner near the bottom, so as to send a spreading pencil of light that will strike the ground at a small obliquity.

3rd. A common lamp placed at low water mark, may perhaps be sufficient for directing the Boatmen. But it might also be made to assist on lighting the xxxxx part of the pier. I should therefore recommend a longer wick or burner than ordinary and behind a small metallic Reflector, perhaps 6 or 8 inches wide and in the centre of it a lens of 3 or 4 inches. By this arrangement the lamps would be easily seen from the opposite side of the passage, while it would guide the passengers in landing by throwing a tolerably vivid light where it is most wanted, in aid of the distant principal Reflector

Signed John Leslie

Edinburgh 8 Jan 1818