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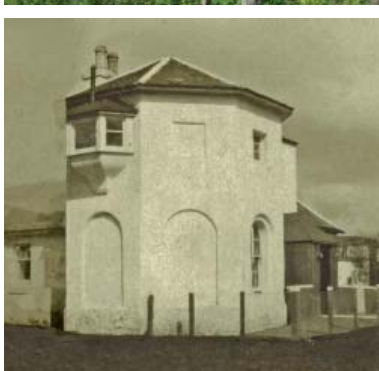
Architects



BONA LIGHTHOUSE



Statement of Significance



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1.0 Introduction

Bona Lighthouse lies at the North end of Loch Ness close to the settlement of lochend, at the entrance to the narrows which link Loch Ness with Loch Dochfour (Little Loch Ness).

Its attribution as a lighthouse links it with the Caledonian Canal and Thomas Telford, but its story is possibly more complicated than this.

Like so many utilitarian buildings it does not appear directly in the record books and certain assumptions and an element of conjecture is required in order to establish its history and from this, its significance to the social and built heritage.

2.0 Methodology

The Statement of Significance for Bona Lighthouse was commissioned by the Vivat Trust to assist both the Trust and professional design team in considering how the property might be repaired, preserved, protected and changed.

This outline Statement of Significance should not be regarded as a Conservation Plan. It has been commissioned at an early stage in the project and its purpose is to describe the significance of the heritage asset in outline form, pending further research. Neither is it a heritage impact assessment which normally follows when the full impact of the development proposal is known.

It will however touch on the conservation policies resulting from the Statement of Significance; which should:

- Retain or reveal that which is significant
- Identify feasible and compatible uses.

3.0 Statutory Listings and Designations

The statutory listing describes the building as follows:

Thomas Telford, circa 1815. Two storey octagonal lighthouse with various single storey additions extending North and East, group closed to rear by high coped rubble wall. Buildings all white. Shallow round headed recesses in ground floor with windows in alternate facets; square recesses in alternate first floor facets; first floor oriel projects at West (to contain former light; piended slate roof. Irregular single storey ranges with varied fenestration and slate roof.



Bona from the opposite bank.

The building is Category B listed (05 October 1971), a building of regional or more than local importance, and appears to be categorised as a beacon.

Site number NH 63 NW 29.1
NGR NH 60199 37704
Canmore ID 13180

4.0 Background

The place name Bona is said to derive from 'Bon Ath'⁽¹⁾ the white ford, so named because its position at the North end of Loch Ness, the longest inland water in Scotland would have from early times been where people crossed the water.

Bona, before the coming of the Caledonian Canal, was different in so much as not only did the canal engineers first deepen and then widen the channel at this point, but they also raised the water level of the loch system. Before this date Bona would have been the ford its derivation implies and it was known as a major crossing for the drove roads running South from Beauly.

This road to Bona used to leave the Urquhart road out of Inverness at Dochfour⁽²⁾ and follow the river bank around the Abban water past Castle Spiritane (Spioradain) which was strategically positioned to defend this narrowing and ford. All this including the remnants of the castle were flooded as part of the canal works.

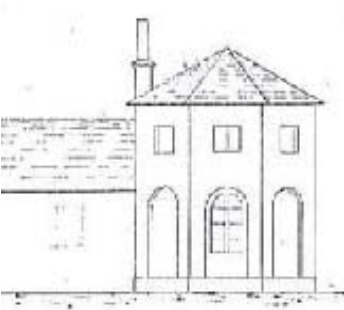


Castle Spioradain and Bona, 1810

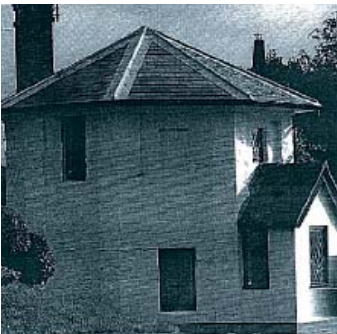
Prior to the beginning of the nineteenth century travel in general was difficult in the Highlands, and the West side of Loch Ness beyond Abriachan in particular presented problems to the road engineers and so at this time one must also remember that the main communication route in the area⁽³⁾, General Wades road through Dores followed the West side of the loch about a mile distant from Bona ferry which would have served as an artery feeding traffic to this road from the West. An illustration of this period thus shows a small settlement at Bona with Castle Spioradain in the foreground and Aldourie beyond⁽⁴⁾.

5.0 Bona in the Context of the Caledonian Canal

It is not intended here to provide a biography of Thomas Telford or the Caledonian Canal, but this short explanation may explain the derivation of the form of Bona Lighthouse. Suffice it to say that Thomas Telford is acknowledged as one of the foremost engineers of the Industrial Revolution and the Caledonian Canal perhaps his most ambitious work.



Extract from original drawing.
Dwellinghouse and Store at
Bona.



Montford Bridge Toll House,
Shropshire, 1792.

In 1803 Thomas Telford (1757 - 1834) was at the height of his power and working in Scotland both as the engineer appointed by the Commission for building the Caledonian Canal and to continue building roads. In the late Summer, in the company of William Jessop he was surveying in the Great Glen and by 1804 he had appointed Matthew Davidson to supervise the construction of the canal from the northern end ⁽⁵⁾. The canal was a huge undertaking and by 1805 five hundred men were employed at Clachnaharry, Inverness.

This is of relevance I believe because Thomas Telford placed great trust in his superintendents. He had to. In this same period he was finishing the Ellesmere Canal, working on the Grand Junction Canal and opening the Dunkeld Bridge. When an attribution is made to Thomas Telford for a structure such as this, I believe that the guiding principle was Telford but that it is much more likely that the detail was left to his superintendents.

Matthew Davidson, although Scottish, supervised the Chirk Aquaduct on the Ellesmere Canal on behalf of Telford, prior to coming North to work at Inverness. Many of the early workforce on the canal were also Welsh and had brought their experience North.

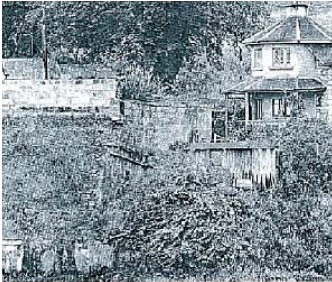
By 1814 they had reached Loch Dochfour and started dredging, but it was not until 1818 that the canal opened through to Loch Ness.

It is therefore likely that the structures at Bona were built in this period and the building is attributed to 1815. The drawings which still exist are entitled "Dwelling house and store at Bona"⁽⁶⁾. No mention is made of a light, nor is one shown, so why is the building the shape it is?

It seems obvious that Matthew Davidson and his workforce would have brought with them a knowledge of Telford's work as Surveyor of Public Works for Shropshire and the octagonal toll house of, for example, Montford Bridge, Shropshire of 1792, with its recessed planes containing alternating blind windows ⁽⁷⁾.

In the period running up to 1815, Telford was also planning the Holyhead Road, probably best recognised now for its series of fifteen toll houses of similar octagonal design. We therefore suggest that this is the background to the decision by Telford and Davidson to build an octagonal building.

Is the toll house design significant? Toll houses were usually this shape to look up and down a road with a toll board being placed on the blank face. Is this analogy appropriate to the ferry? If so, why was it not built nearer the water?



Conon Bridge Abutment
1806-1809

Possibly significantly we have a similar toll house on the Conon Bridge abutments of 1806 - 1809⁽⁸⁾.

Working so extensively, there must have been a tendency to standardise, to avoid re-inventing, to borrow a design.

Our suspicion is that its formalised form was more architectural than functional and this decision is from Telford's guiding hand, but not fully thought through in terms of how it was set in composition with the other buildings in the complex, particularly in terms of their junctions. This detail was left to Davidson or his contractor.



Toll House, Llanfair,
Holyhead Road

On the Holyhead road the two storey Anglesey toll houses which are again similar appear to be built to a standard specification⁽⁵⁾.

"The whole of the walls, except the plinth, steps and window cills are to be of good sound brickwork, to be laid solid in good mortar, composed of lime and sand; and the outer joints to be neatly struck with the trowel. The plinth, steps and window cills to be of neatly tooled freestone. The rooms numbered 1 and 2 on the plan are to be floored with paving tile, well bedded in mortar. Those numbered 3 and 4 are to have joints of batten fir, sixteen inches from centre to centre, seven inches deep and two inches and a half thick, and to be covered with wrought-iron board of fir or poplar. All the ceilings to have joists not less than three inches by two inches and the roof to have rafters of the same dimensions, with purlins four inches square under the whole of them. The ceiling, joists, and rafters to be sixteen inches from centre to centre. Hips and ridges to be one inch and a half by eight inches. The roof to be covered with good slates, nailed on two inch sawn lath and to be rough rendered inside. All the hips and ridges to be covered with lead, fifteen inches wide, and not less than five pounds to the foot, and valleys not less than six pounds to the foot. All Ceilings to be plastered on heart lath, two coats, floated and set. Walls to have two coats, rendered and set. The underside of the portico and projection of the roof to be also sealed and plastered, and faced with a three inch and a half fascia board. All ceilings and plastered walls to be whitewashed, to have six inch skirting round all the rooms, of fir, one inch thick. Outer door frames to be of oak, four inches square. The front door to be two inches thick, six panelled, square and rusticated. The back door to be of one inch and a half deal, ledged, ploughed, tongued and beaded. Inner door frames to be left of fir, not less than four inches by three inches. Inner doors of one and a half inch fir, six panelled. Window frames to have oak cills and the rest of the framing to be of fir, glazed with best second diamond fashion in lead, with quartered oak casements and iron saddle bars. There is to be a five eighth of an inch beaded angle staff at every external angle of the plastering. All timber work, except where otherwise expressed, to be of Baltic fir.



The porch to be supported with oak or larch poles. All the timber work usually painted to be painted three times in oil. The inner doors and skirtings to be finished chocolate colour; the rest of the interior to be white; all the outside to be painted dark green. Grates must be fixed in the fireplaces, each of which must have stone hearths, jambs and mantels. All doors and windows to have proper locks, hangings and fastenings; and the whole house to be finished in a complete workmanlike manner. A privy must be built near the house, with proper seats, roof, door, &c complete, to be placed in such situations as may be pointed out by the commissioners' engineer or his assistant".



It is our suspicion that a detailed specification of this nature and a sketch or indication of the intended form would be given to the contractor. Telford tended to work with a limited number of firms, in this case Simpson & Carrigill and the detail was probably developed by them. This was how Telford specified roads and straightforward bridges. It also accounts for the differences between the drawing and what was built.



This approach seems to have been taken to its logical conclusion in Telford's Highland churches and manses where we have direct evidence of both standardisation of design and the specification including the sourcing of components. We also have correspondence that shows that his three surveyors produced the church and manse designs rather than being directly attributable to Telford, and he subsequently chose the most suitable and refined these ⁽⁹⁾.

Plan and Elevation of a manse of one storey, 6th report, Highland Churches, House of Commons 1831.

The original drawings for Bona, like those of the Anglesey toll houses are both formal in composition and practical. They have a bedroom set over a kitchen below. (See Appendix 1 for drawing.)

What is unusual in the case of Bona is that this is grafted on to a store and stable on one side and another bedroom with separate porch on the other, surrounded at the rear by a yard.

One explanation for this is that before the coming of steam tugs, and despite the canal being built to take sail powered ocean going vessels, when little wind was present these vessels would be towed along the canal stretches by horses. Thus there would be a need for stabling at Bona which was apparently a days walk from Muirtown basin. This explains why the drawing shows four stalls. The rate for this was five shillings a day plus the lock fees of one farthing per ton, and so provided a good source of income.



From 1818 onwards when navigation commenced to Loch Ness, Davidson was reporting ten vessels on Loch Ness at one time, and in one report that a Sunderland vessel was discharging butter and tar for sheep smearing at Bona and taking on wool.

It is therefore likely that the quay was in place at this time and the commissioners, never slow to miss a trick, would have built the ferry piers in order to take a toll once the loch was raised and the ford drowned ⁽¹⁰⁾.

The canal also employed upwards of fifty people and involved continual maintenance and so it is likely that the store room served this purpose.

It is also recorded that the lock keeper at Dochgarroch farmed twenty four and a half acres at a rent of £15 per year and so it is quite likely that the yard at the very least provided some garden crops or allowed a pig to be kept safely by the occupant.

6.0 Materials

As the canal was such a massive engineering enterprise it is known where many of the materials are sourced and as there appears to be a similarity between the stone of the break water and that of the house one can conclude that local stone came from quarries established at Dochfour. If they did not come from the main rubble quarry under Craig Phadrick, while free stone is likely to have been sourced where the dressings for the locks were sourced at Redcastle on the Black Isle and lime from Phopachy, towards Beaulieu on the firth ⁽¹¹⁾.

By 1815 with the waterway open, fir for carpentry would be brought in by boat and this would also have eased the moving of slates which appear to be West Highland.

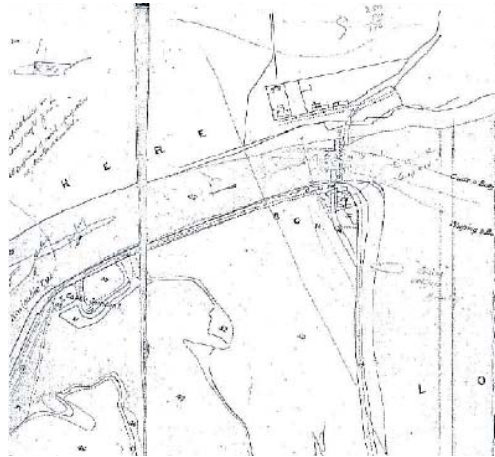
Interestingly the whins and broom along the banks were also planted to help consolidate the excavations as were Norway Pine.

7.0 The Light

The history of the Canal after 1822 when it opened was as much that of a failure to live up to expectations (although by 1823 it was carrying 9000 tons per year), as one of claims against the commissioners and a continual battle against nature to maintain it as a operational waterway.

By 1843 the canal required a major overhaul. By this time Telford was dead and the work was carried out by Jackson and Bean of Aston, Birmingham. The work did not just involve repair, but also improvements. Steam tugs replaced horses and we know that the channel at Bona was widened.





Survey of 1843 Highland Council Archives

Drawings held by The Highland Archive from this time show our complex of buildings separated from the water and ferry pier by other buildings which may predate it ⁽¹²⁾. I think the widening of the channel may have swept these away.

One of the improvements in 1847 at Fort Augustus was to add the lighthouse. It is therefore likely that this is when Bona became a lighthouse. It is consistent with improving access to the channel and J R Hume notes that the building was adapted in 1848 ⁽¹⁵⁾. Certainly the first OS map shows it as such ⁽¹³⁾.

It is unclear what the lighting arrangements were in the early days, but site evidence suggests that the inner glass doors may have made up for the outer window which is hinged in such a way that it may have been left open when the lamp was operational ⁽¹⁴⁾. Correspondence also exists between the canal commissioners and William Moyes & Sons, marine lighting Engineers, Glasgow which show that Bona was converted in 1934 from paraffin to acetylene and 60 degree dioptic lenses fitted. The initial survey took place in 1931 with William MacDonald the lighthouse keeper, and William Moyes made clear in a letter that they did not regard the bedroom as a safe location for the carbide generator which tells us that this room was being used for its initial purpose at that time.

Thus it was agreed in 1932 to build the lean to shed below the light to contain the 10lb carbide generator.

It is believed this arrangement continued until 1964 when the light and presumably the building were electrified.

It is not clear as yet when the last lighthouse keeper departed and the system went automatic, or when it was removed to the beacon on the lawn in front of the building and the buoys were given their lights.





Footnotes

- (1) Discovering Inverness-shire, Lorraine Maclean, Glasgow 1988.
- (2) Antiquarian Notes, Fraser MacKintosh, Inverness, 1897.
- (3) New Statistical Account, Inverness, Ross & Cromarty, 1835.
- (4) "Ambaile" highland history and culture website.
Castle Spioradain, 1810's from Fraser MacKintosh collection.
- (5) Telford's Britain, Derrick Beckett, 1987, David & Charles, Newton Abbot.
- (6) Drawing held by The Highland Council Archive Service.
- (7) On tour with Thomas Telford, Chris Morris, Tanners Yard Press.
- (8) Great Engineers and their works, Thomas Telford:
Brian Girdle and Patricia Miles: David & Charles, Newton Abbot.
- (9) Telford's Highland Churches and Manes.
The very Reverend Allan MacLean of Dopchgarroch.
- (10) "The right to half of the duties leviable at the ferry is rested in the commissioners by nature of their possession of the lands on its North West side; subject to maintenance of the requisite ferry accommodation."
- (11) Thomas Telford, LTC Rott, Gloucester 2007.
- (12) 'Plan of the Caledonian Canal and lands belonging hereto', surveyed by H Morrison 1843-4.
- (13) OS-6 inch map, First Edition, Inverness-shire, street xix.
- (14) Letter, William Moyes & Sons to Enstace Porter Esq, engineer and manager, Caledonian Canal dated 27 March 1832, held by Highland Council Archive Service.
- (15) J R Hume, Harbour Lights, 1997 held by RCAHMS.



8.0 Statement of Significance

The following adopts the hierarchical system of evaluation advocated by James Semple Kerr in 1982, thus it classifies it as either exceptional, considerable or of some significance.

The assessment is made on the basis of its value in terms of aesthetic, historic, scientific and social.

Historic

- SS01 The building is attributed to Thomas Telford, acknowledged nationally and internationally as one of the foremost engineers of the Industrial Revolution.
- SS02 The building is an integral part of the Caledonian Canal, a feat of engineering set in the Highlands of Scotland which is generally considered to be one of Telford's masterpieces.
- SS03 The complex of buildings at Bona are significant in being a survival from and retain evidence of the earliest period of the Caledonian Canal when vessels were horse drawn.
- SS04 The building is historically significant in retaining evidence of each phase of the history of beacons on the Caledonian Canal.
- SS05 The building is an integral part of the Caledonian Canal's infrastructure and has its place in the history inland waterways in Britain. It is significant in being a rare inland lighthouse.
- SS06 The form of building is historically interesting and thus significant in the development of industrial forms in that it reflects elements of the Toll House in its form.

Sociological

- SS05 The building complex is significant in that when read with the social document, it casts light on the working and living conditions of those involved in the canal.

Aesthetic

- SS06 The building is of considerable significance in terms of its setting in the landscape at the end of the loch, when viewed from a distance.
- SS07 The building is of less significance aesthetically when examined in detail in terms of the junctions and reflects an artisan approach where possibly the idea of the octagonal plan has been drafted on to.
- SS08 The present condition of the building is detrimental to its significance.
- SS09 The agglomeration of electric poles and overhead wires although interesting context are aesthetically detrimental.
- SS10 The lean-to carbide shed is of some significance as is the porch which has been present at least since the 1920's.
- SS11 The evidence of the cobble floors and drain in the stable are of significance to the fabric and should where applicable be retained.
- SS12 The garden and yard walls are significant in the building's setting as well as being historically and socially important.
- SS13 The present condition of the pier and jetty is detrimental to the significance of the building, both aesthetically and historically.
- SS14 The surviving internal detail is significant to the building and much may be original.



9.0 Conservation Policies

The purpose of conservation policy is to state how the conservation of the place may be best achieved both in the long and the short term. It will be specific to that place.

- CP01 Works of repair and consolidation should be undertaken in accordance with the philosophy embraced by international conventions and conservation charters; in general there should be a presumption against conjectural restoration or reconstruction and the works should involve the minimum of intervention to the historic fabric, and they should, wherever possible, be reversible.
- CP02 Techniques of conservation repair, subject to the foregoing, should observe guidance set out in current Technical Advice Notes and other recent advisory publications from Historic Scotland; nothing however should preclude adherence to other accredited sources for best conservation practice.
- CP03 Protect, preserve and enhance all those features of historic importance listed in the Statements of Significance.
- CP04 Any new work of intervention to the fabric of the site, required to secure present or future uses should preserve and enhance significance, be of the highest standards of contemporary design, and have minimal impact on historic fabric.
- CP05 In general where the historic fabric of the interiors has been lost, (subject to the above clauses) the treatment of spaces in the adaptation of new, or continuing uses, should be carried out in a contemporary manner to the highest design standards as a positive enhancement, but should be deferential always to the existing historic fabric.
- CP06 In general, where there are redundant or under used spaces, consideration should be given to utilising these fully within a programme of continuing, or future uses, for each of the structures on the site.
- CP07 In undertaking work of any kind that may pose a risk to the historic environment during the course of its execution, ensure that appropriate protection is in place for the entire duration to an agreed risk management strategy.

- CP08 In seeking to apply the best standards of conservation only skilled contractors, craftsmen, or conservators should be engaged, capable of interpreting the standard set down in specifications or other documents.
- CP09 When engaging professionals, conservators or craftsmen, seek to ensure that a policy for skills training and continuous learning is promoted and adhered to.
- CP10 Record by way of site notes, drawings and photographs all historic features that may be revealed (or concealed) during the course of the works and, likewise, record any features to be removed; the survey products should be annexed to the conservation plan for future reference for when the document is updated.
- CP11 There should be a presumption against the use of chemicals in any treatment of the historic fabric; the same considerations must be given to avoid damage to the nature conservation of the site, and in particular to protected endangered wildlife species.
- CP12 Ensure that specifications for the various types of historic pointing and lime harling reflect the original finish and local traditions, and are based on analysis of the original mortars and their aggregates; similarly where mass concrete construction has been utilised where repairs are needed ensure that the mortar and aggregates replicate those in the original work as closely as possible, based on analysis, which should establish if the mortar is lime or cement based and ascertain the relative strength of the strength of the material.
- CP13 Consistent with the above, in the case of timber subject to fungal attack or continuing dampness, a conservation led approach should be adopted to cause minimal damage which should extend to controlling sources of dampness and the internal environment, with subsequent monitoring, if judged appropriate.
- CP14 Retain existing fixtures and fittings within the context of the appropriate new use.
- CP15 Re-detail the flat roof element against the Octagon to reflect site evidence.

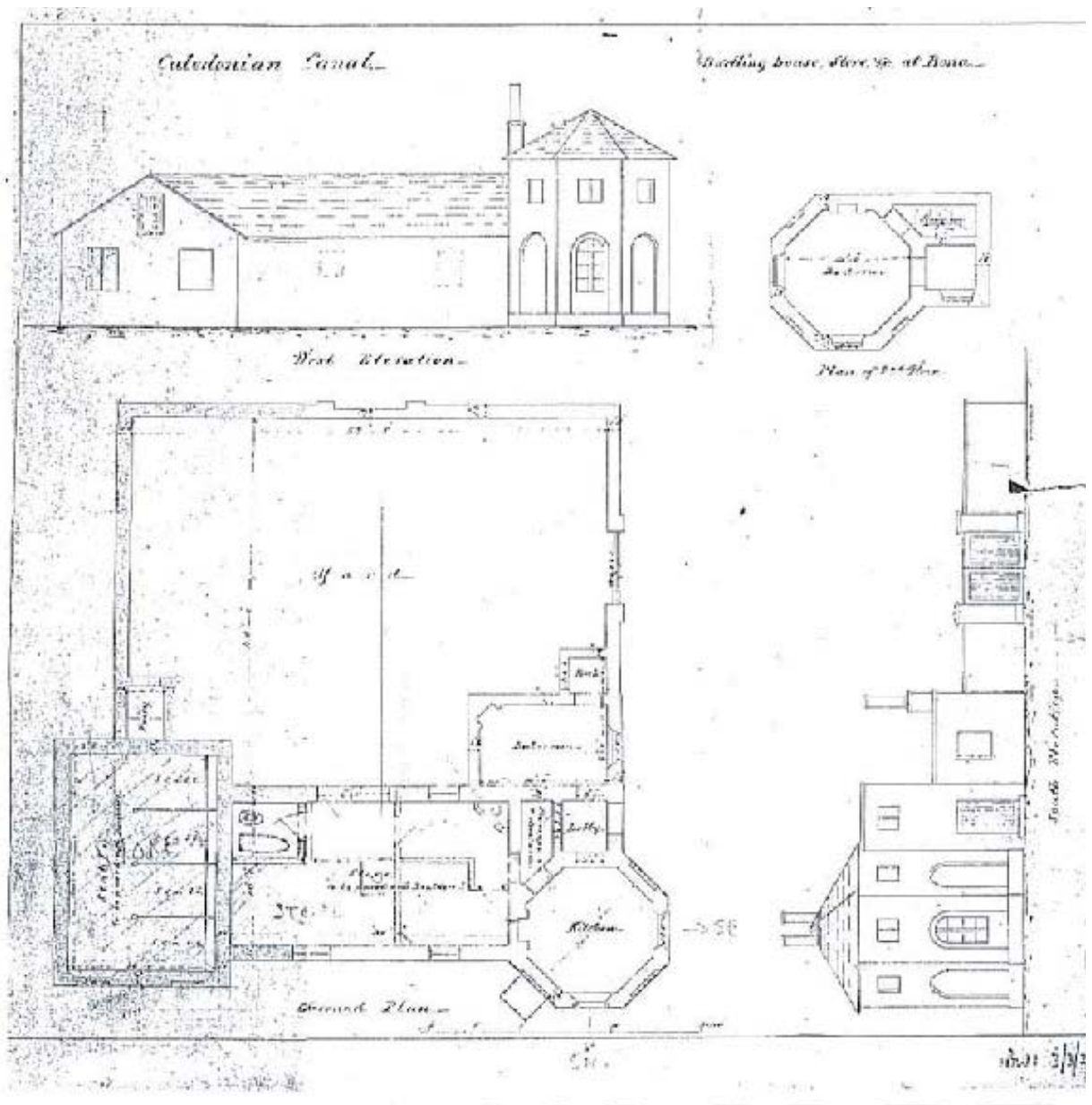


10.0 Acknowledgement

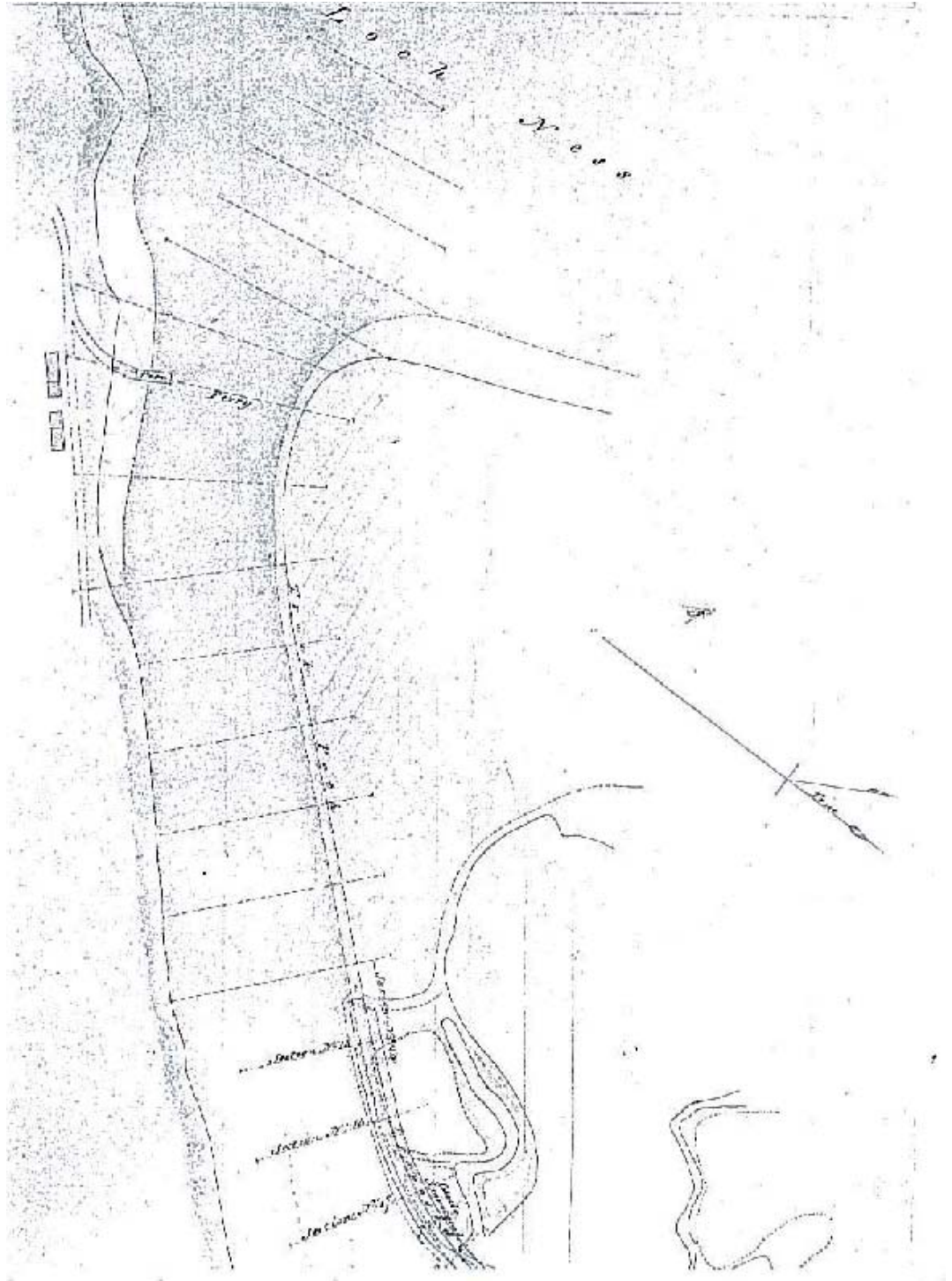
Thanks to Mark Smith from British Waterways for providing access to archival material and Simon Green from the Vivat Trust for his research.

Appendices

Appendix 1: original drawing of Dwelling House and Store at Bona, 1815



Appendix 2: survey of Bona Ferry 1803



Appendix 3: survey of Bona Ferry 1843

