

# **Cruickston Farmhouse and Stone Barn** **Condition Report**

**October 2002**

*Prepared by:*

**André Scheinman, Heritage Preservation Consultant**

## **The Farmhouse**

### Main Section

#### ***General Description***

##### Exterior

The building is a 1½-storey structure built of local limestone with a medium pitch gabled roof. It is orientated longitudinally to the road with the façade divided into three bays consisting of two large windows (8/12 lights each) symmetrically flanking the main entrance. The house was constructed on a site which sloped relatively steeply to the north affording two storeys above grade at the rear. This siting suggests that the lower level was intended to combine general living along with typical cellaring functions.

The building originally had chimneys at each end, the sections above the roofline having been removed during a 20<sup>th</sup> century re-roofing. The current chimneys, metal at the east and brick at the eastern section of the rear elevation, are both of recent origin.

The stone used in the walling is a combination of small rubble units, and, particularly at the quoins, larger sections which are extremely fossiliferous. This material is particularly unusual in that the size and extent of the fossilization creates fascinating patterns in the wall surface of the building. Unfortunately the fossils are also associated with fissures and gaps which trap water on the building face. It is likely that it was the nature of the stone that led the owners to finish the façade in a lime stucco ‘lined out’ to appear as fine ashlar. This practice, which usually involves incising thin ‘coursing lines’ into the finish layer of stucco and occasionally, as here, further emphasizing the line with lampblack, was used throughout the 19<sup>th</sup> century in Ontario (earlier in U.K. etc.) to ‘upgrade’ the appearance of the façade. The Elizabeth Cottage (c.1840) and Gildersleeve House (c.1827) in Kingston are both finished in this manner. It is difficult to assess from this preliminary investigation as to whether this was the original treatment of the façade but it is clear that it was certainly early. Also of note is the treatment of the gable ends, which, rather than being fully stuccoed, have the stonework heavily ‘battered’ with mortar which is then ‘lined out’ to give the impression of randomly coursed broken ashlar. It should also be noted that several generations of these lining treatments are evident. Only on the rear elevation is the stonework left to look much as it is actually laid, rough, irregularly coursed rubble with wide mortar joints though even here lines have been scored into the wide mortar joints to create an impression of greater regularity.

There is a moulded wood cornice at the eave, with the mouldings based on elliptical forms associated with the ‘Greek’ influenced styles. The cornice is returned at the gables. The light division of the windows is suggestive of an early construction date, but the actual pane and muntin size is more consistent with c.1840. In general the treatment of the façade with its stucco finish returned right to the window openings is Greek Revival in derivation. This is also suggested by the main entrance with its door composed of two

paneled leaves (top panels now replaced with glazing) and rectangular transom. The door is set in a wood paneled reveal. There is evidence of an early 'knocker'. The windows have substantial wood sills, though at the east window the original has been replaced with two smaller sections. The rebates for shutter hinges are evident at the window jambs, a feature which would greatly enhance the façade. The gable windows are 6/6 and light the upper rooms. The rear windows are disposed in a functional manner. The window at the northwest room on the main floor is also 6/6. As this window does not have the voussioired flat arch which is typical elsewhere it is probable that it was added later.

The roof was originally wood shingled, as can be discerned from the presence of 'shingle lath' still in place over the rafters, below the recent plywood deck.

### Structure/Plan/Interior

As noted above the walls are of rubble stone. The window openings are formed as splayed embrasures. While the southern section of the building extends well below grade it is difficult to ascertain how much frost cover there is at the 'walk-out' section at the rear.

The first floor structure is of heavy timber with 8" x 8" @ 36" o.c. 'joists' running east-west to two main transverse beams (8 ½" x 11") which roughly define a center hall area. The more westerly of the beams, directly adjacent to the stair, is carried on a stone wall. This wall bears interior walls through the floors above. A post has had to be placed under the easterly beam. At each end there is a 'trimmer' beam which, given their respective locations in relation to the chimneys, strongly indicate the framing for fireplaces with hearths. The framing members to the east of the wall are carefully hewn square while less care has been taken with those to the west of the partition. Limewash has been applied to all surfaces in both sections. Given the nature of this space, relative high ceilinged, well lit, with direct access to the exterior (including possibly a spring) it is possible that the east area was the original kitchen and food preparation area while the west area served as storage etc. prior to the building of the east addition. This would have meant a cooking hearth at the east end though this cannot be substantiated at this time without further investigation.

The floor framing established in the cellar approximately reflects the plan above. The basic first floor plan of center box hall and three rooms may well be original. The box hall reflects an emphasis on function rather than ceremony within the interior. The maximum space is provided to the actual rooms with a simple front foyer (rather than center hall) despite the fine front door treatment. The large rimlock at the front door and the remaining keeper at the jamb are quite early, typically c.1840 or earlier. The interior is characterized by wood lined window embrasures, simple wood casings with beaded interior edge at doors and window openings, interior doors of four panels and exterior doors of six panels and a simple base with ¾ round approx. 7" high (to original floor level.) The original flooring is visible from the cellar as approx. 6" tongue and groove. As was typical this was covered in the early 20<sup>th</sup> century with narrow strip hardwood. A likely original room arrangement is the dining room as the large east room, (though with

portions of it used for other functions from time to time) and sitting room/parlour at the front west with study/office/library at the rear. The west room was probably used as a bedroom from time to time as well.

The built-in cupboard at the 'parlour' appears to be original. Indeed the main change at this floor is the closing in of the fireplaces (the base in front of the former fireplace areas is noticeably later than elsewhere). As well the introduction of several closets, the removal of the door into the dining room (stored on site), the ceiling finish in the 'dining room' and the replacement of stair treads are the other main readily apparent changes.

At the second storey the western section including partitions, trim etc appear to be original while the main hall cupboard, existing partitioning and wall treatment to the east of the stair are all later. It is possible that the eastern area was originally divided into several 'slip' bedrooms.

The roof structure is composed of substantial sawn 3 ½" x 5" rafters at approx. 4' o.c. with full 2" x 6" collar ties. 1" x 3" shingle lath (battens) is nailed to the rafters at 8" o.c. Plywood has, in recent times, been placed over the shingle lath as a new deck for the asphalt shingle.

### Kitchen Addition

The one storey addition built to house the kitchen and as access to 'dependencies' such as woodshed etc. appears to have been constructed not long after the original building, probably within fifteen years. The walling material was once again the unusual local limestone and the lined stucco finish was extended from the main section to the south and east walls of the addition. The typical windows of the addition are 6/6 and set into splayed embrasures as at the main section. The roof is a medium pitched gable which now extends out continuously over an 'L' shaped verandah, forming a hip at the southeast corner of the verandah. The cornice is much simpler than at the main section. While a verandah may have been associated with the kitchen addition from very early it may have varied somewhat in terms of roofline and deck height from this existing configuration. Obviously the concrete block treatment including verandah knee wall, and 'mudroom' entrance are recent, as is the panelboarded ceiling. The current verandah design led to the cutting down of the wood columns.

While the original layout of the kitchen is somewhat difficult to ascertain with certainty typically it consisted simply of one large room with a cooking hearth and/or cookstove at one end and so it would appear here. There is, however evidence at the ceiling which does suggest a partitioning at some time in the past. It seems possible that the cooking hearth may have shared the east chimney, possibly tying in to the former flue of the basement cooking hearth.

Interior trim differs somewhat from that of the main section with the typical casing being finished with an ogee and the windows having an apron with small bead at its outside edge. There is a line visible on the walls at approx. 14" below the ceiling indicating a change of finish which may have been associated with a frieze treatment such as is done with wallpapers.

Of some interest is the question of whether any use was ever made of the substantial area below the first floor at the rear of the kitchen where grade was much lower. One would expect access at least for storage.

### ***Condition***

Despite its age, the less than optimum nature of the building stone (from a weathering perspective) and the sloping site the building is in relatively good condition. The first floor structure and the roof structure seem relatively free of fungal or insect attack. Issues of concern are presented below, most of which can be readily addressed.

### Exterior

#### *Roofing*

The roof is in extremely poor condition and requires replacement.

#### *Flashing*

The flashing between the main section and the addition has been poorly executed with the flashing's leading edge turned outward for caulking rather than secured into a reglet. This is also the situation where the rear shed abuts the north kitchen addition wall. When the caulking sags and/or fails, water is actually directed behind the flashing.

#### *Cornice and Verge Trim*

The wood cornice of the main section is in generally good condition except where the later brick chimney extended up through at the rear. However where the cornice returns at the southeast there is decay, probably due to the ponding of moisture. Also all the mitres at the peaks of the vergeboards are open with the worst case at the east gable of the addition.

#### *Gutters and Rain Water Leaders*

A low point occurs along the front verandah gutter approx. 1/3 distance from the dropper. Water has clearly backed up here many times to the extent that there is serious decay at the fascia and soffit and behind the paneled ceiling, probably including the rafter ends. Fruiting bodies were seen growing out from behind the ceiling/fascia junction.

### *Stucco*

The lined stucco is in relatively good condition directly related to how well it has been protected from moisture draining on to it. Paint is flaking off the stucco throughout suggesting that the last several coatings may have not been compatible with the permeability requirements of the stucco. There is loss of stucco beneath both front windows and to either side of the porch where water from the porch runs off on to it.

### *Stone Walling*

The areas of deep fossilization, where not stuccoed, are prone to collect and trap water. At the west end wall the masonry courses close to grade are damp and mortar has been lost from many sections in that area. There is also creosote staining visible along the west wall at the former chimney location.

At the rear there are also areas of mortar loss. The masonry is in worse condition at the northeastern section of the building. A major cause appears to be the extensive moisture which runs down the rear shed roof and directly on to the kitchen addition wall, eroding mortar and, along with the spilling out of a rwl and a possible spring in the vicinity, creating a wet environment adjacent to the masonry. This area then becomes susceptible to freeze/thaw action as well as possible subsidence of soils. As noted earlier it is not clear how deep the foundation extends below grade in this area. There is a pattern of diagonal cracks and a discernible bulge in the kitchen addition in the walling of this area. At the interior of the kitchen there is a wide crack at the wall/ceiling junction in this area again indicating wall movement.

### *Windows*

All the windows require puttying and painting. The check rail at both front windows of the main section appear to be buckling slightly. Both these windows have had extensive damage to the sills. At the east the sill has been replaced in two sections which are already decaying and at the west, a large longitudinal gap has opened at the sill currently partially infilled with a another piece of wood but still allowing moisture to enter around it. It is likely that the wood sills of some of the less accessible windows are in similar condition.

### *Interior*

Other than the major crack noted above and several minor cracks and water staining observed at the second storey ceiling there are few condition issues in the interior. Of course the later intrusions into the historic spaces and the current nature of the wall, ceiling and floor finishes needs to be addressed.

## ***Heritage Appraisal***

The building is a good example of a farmhouse from prior to the mid-19<sup>th</sup> century with a large amount of surviving heritage fabric, discernible original plan and a number of relatively unique features, notably the nature of the building stone, the lined stucco and the use of the sloping site. The most significant loss is that of the chimneys. The removal of obtrusive material could be undertaken quite readily.

It is a structure well worthy of preservation within the proposed Interpretive Centre scheme. There are a number of uses which could be applied to it as long as it was not structurally or climatologically stressed too much. Such uses as library and reading room, staff offices, residence for caretaking and/or curatorial staff, meeting rooms are all possibilities.

## ***Preliminary Conservation/Restoration Recommendations***

1. Further on-site investigation of possibility of cellar kitchen; position of fireplaces.
2. Search for historic photos to confirm appearance of features such as the chimneys and the addition verandah.
3. Restore wood shingle roof and replace flashings with counterflashings set into reglets.
4. Consider rebuilding of chimney tops
5. Rework gutter design at addition verandah
6. Carefully remove existing paint from lined stucco, cut out and repair damaged areas of stucco with matching stucco mix, lined to meet existing 'coursing' and finish with a breathable masonry coating.
7. Repoint in areas of mortar loss with lime based mortar. At gable ends of main section reintroduce 'lining' into repaired areas to match the original pattern.
8. Provide a gutter to the rear shed to drain away from the rear wall of the Kitchen, monitor existing cracks or repair and monitor.
9. Provide new wood sills, matching original, to windows where now decayed. Reputty glazing and restore shutters and shutter 'dogs'.
10. Remove later aluminum storm doors, T.V. tower and porch with satellite dish, metal chimney and later brick chimney.
11. Clean creosote staining
12. Retain as much of existing original interior fabric and floor plan as possible within projected new use including doors, door and window casings, base and built-in cupboard in west front room. Restore wall, ceiling and floor finishes.
13. Remove all decayed elements from verandah as well as paneled ceiling and restore sound material and original finishes (possibly earlier verandah treatment if confirmed).

## The Barn

### General Description

The stone barn with ventilation slits is an excellent (and relatively rare) example of a transitional barn type which is essentially an English Barn but incorporating aspects of the 'German' Bank barn, common on the Mennonite farms of the area, in terms of its design and siting. The English Barn, as the name suggests, has its origins in 17<sup>th</sup> century Britain. This barn type is also known as a *three bay barn* due to its internal division into three functional areas, essentially two mows and a threshing floor, still readily discernible at the upper storey (and now only accessible storey) of Cruickston. The classic version of this type of barn never had a livestock function but was solely designed for the storage and processing of wheat. Hand threshing was undertaken in the central space. Unthreshed grain was stored in one side bay, and during the fall and winter threshed by hand using a flail on the central threshing floor. The threshed grain and straw were separately stored on the other side in the opposite bay, the grain in built-in bins. Prior to the construction of the rear addition the back doors could have been opened along with the front to winnow grain by the creation of natural drafts. Ventilation was key to the storage of grain due to the possibility of spontaneous combustion and thus the 'slits' in the stonework, configured to form a pattern and formed to splay out into the interior.

However a particularly interesting aspect of this barn is the incorporation of the change in grade into the design, allowing use of a lower level. This was a feature of the Bank Barn which came to the area from Germany via Pennsylvania. Usually this lower level was used for livestock. Whether that is the case here is difficult to ascertain definitively without further investigation.

The building is constructed of the same stone as the house and would appear to relate closely to it in terms of construction date. The use of the larger fossiliferous stones for quoining is also evident. The massive front doors allow the entry of the hay wagon. Though the massive jambs and lintel are early the monumental doors themselves are of much more recent vintage and have provably been replaced several times.

The roof is a medium pitched gable and the walling is stone right to the gable peak. The internal structure is defined by heavy timber cross ties set at approximately third points. These members act to tie together the longitudinal walls, restrain the wall top plates and support the purlin brace structure. They are themselves supported by columns, around which the interior partitioning is developed. The oblique purlins are formed of two sections scarfed at the eastern brace. The purlins in turn support approx. 4" x 5" sawn rafters (though there is some later replacement with pole rafters) @ approx. 42" o.c. As at the house spaced shingle battens are still in evidence, though the roof is currently corrugated metal. At the junction of the longitudinal walls and the gable walls a timber is built into the latter and connected to the top plate to ensure that the corners are tied.

## **Condition**

### *Roofing*

The corrugated metal roof appears to be near the end of its service life. It is corroded, several holes are visible from the interior and sections are lifting (southeast corner.)

### *Masonry*

There are many cracks extending between the ventilation slits mostly due to the constant pooling of water at the base of the slit and its eventual incursions down through the walling. Where cracks now extend between several slits this process must be arrested. The lower courses of stone (to approx. 3' from grade) are constantly damp and there is significant mortar loss in this area. There is a crack pattern toward the northwest on the west elevation above the door which suggests settlement might have occurred. Several cracks at the west side of the front elevation appear to relate to a large rectangular opening cut into the stonework low down on the wall without a proper arch or lintel built in to support the masonry above.

A buttress and/or underpinning wall of concrete has been poured against the rear of the barn, evident from the addition, indicating concern regarding movement possibly associated with the lack of frost cover in that area and/or slippage.

### *Framing*

The heavy timber framing members appear to generally be in good condition, with ventilation being an important factor. However it appears that there is some decay and/or instability at the pinned scarf joint between the two sections of the southern purlin. This is a critical structural joint and any problem in this area must be addressed in the short term. The conditions of the purlin and cross tie ends, where they bear on to the stone are very important. It appears that the purlin ends are sound but this must be thoroughly confirmed as part of any restoration scenario.

It was however noted that the stonework directly under one of the cross-tie ends had become unstable with one unit on the verge of being dislodged. Also the tie end with its substantial loading was bearing directly on only the few courses of masonry directly above a slit.

The rafters appear to be in generally good condition, although several, particularly at the western section, have been replaced by pole rafters.

## The Addition

The shed addition to the rear of the barn is constructed in a much less professional manner than the original. This is particularly true of the timber frame components. The lumber is largely recycled from elsewhere and ‘cobbled’ together in a manner derived from the original barn. A center purlin picks up the rafters in mid-span between the outer stone wall and the top of the rear wall of the original barn. The rafters are composed of two sections lapped over the purlin. The roofline is continuous with that of the north slope of the original barn. Brick is used at the top courses of the inner wythe of the north wall.

## **Condition**

The addition stands proud of the wall plane of the original barn at the west, increasing generally from grade up. As well a gap exists in the north-south axis at this junction also increasing toward the top further indicating movement.

A large diagonal crack exists at the eastern section of the rear stone wall indicating settlement at that corner.

## **Heritage Appraisal**

As noted earlier the stone barn is an excellent example of a transitional barn type which incorporates bank barn elements into, what is essentially, an English Barn. In that sense it reflects much of the nature of vernacular building in the area - combining Anglo and Pennsylvania German practices. With much of its heritage fabric intact, including the pattern of ventilation slits, and its basic plan still clear (despite the unfortunate sealing of the lower level) it could form a strong element in the Interpretive Centre Scheme. The interior barn space is itself quite compelling and any adaptive use of the space should, if possible, minimize the obscuring and/or loss of this sense. Non-climatologically sensitive displays, and seasonal receptions are possibilities. On the other hand if more comprehensive use is required designs could be developed within the interior while still leaving the heritage fabric intact and able to be appreciated.

### ***Preliminary Conservation/Restoration Recommendations***

14. Investigate and confirm use of lower level of original barn.
15. Investigate level of frost cover at rear.
16. Restore wood shingle roofing.
17. Provide unobtrusive apron flashings to ventilation slits to stop moisture incursion.
18. Remove later opening at front (infilling and ‘tooth-in’ with matching stone).
19. Repoint where required with matching mortar which may also involve some selective rebuilding, but likely confined to relatively small, contained areas. Monitor areas of past settlement to ascertain if process still active.
20. Definitively check the ends of all major timbers where set into the stone.
21. Repair damaged purlin scarf.

22. Unobtrusively incorporate bearing plates beneath the bearing ends of the main cross-ties and consolidate stonework, particularly over the ventilation slits.

### ***Implementation – First Steps***

Urgent/Immediate (to arrest building damage and/or potential hazard)

- Replace gutter/rwl arrangement at kitchen verandah (will involve replacing decayed fascia/ backmoulding and section of paneled ceiling as well).
- Provide (at minimum) temporary gutter and rwl to back shed to stop the direct moisture damage to the kitchen wall.
- Stabilize loose stones at and around the western tie beam ends at the barn.

Note: The replacement of the farmhouse roofing is considered the most urgent of the general restoration items, but as long as the general exterior restoration component of the project takes place within the next two years, it can be dealt with at that time (though it should be monitored in the interim).

### Further Investigations

The comprehensive planning of the project would benefit from further investigation in the following key areas:

Structural:

- Confirm the level of frost cover and/or location of bedrock at the north wall of both the house and barn. (Perhaps most efficiently achieved with a ‘bobcat’.)
- Attempt to confirm nature of area beneath the kitchen floor to check possibility of lateral soil pressure- also possible information about use, if any. (If no hatch is found may have to have hole cut into floor.)
- Check condition of purlin scarf(s); and condition of bearing ends of purlins as well as extent of bearing at barn (Perhaps best undertaken with ‘zoom boom’ but would require clear access throughout floor area)

Preservation:

- Examine for further (or any) evidence of: cellar kitchen; main floor fireplaces; addition cooking hearth; treatment of east side of 2<sup>nd</sup> floor; original kitchen verandah treatment. (Would involve some removal of wall and ceiling finishes)
- Consider taking samples of the finishes to analyze in order to understand the various treatments over time and for possible restoration.
- Attempt to investigate the lower storey of the barn
- Continue search for historic images possibly through the families of past occupants/owners.

## Preliminary Budget Estimates

Following discussions re: overall goals and objectives develop a preliminary budget for conservation/restoration components of project.