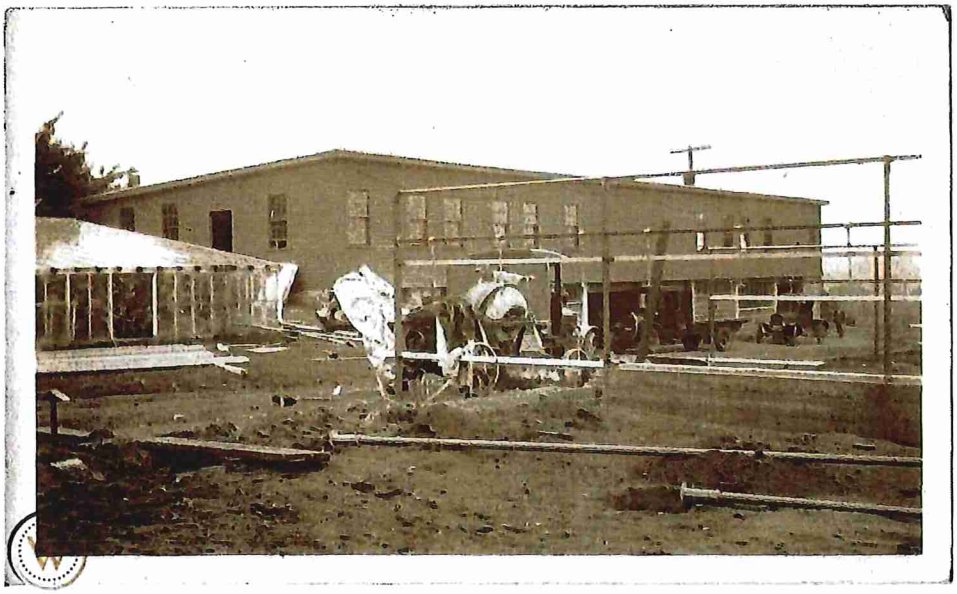

TOWN OF DRACUT
Beaver Brook Farm

Existing Conditions Report - Two Outbuildings

September 30, 2021

JOHNSON ROBERTS ASSOCIATES INC.
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Existing Conditions Report
TWO EXISTING BARNS
Beaver Brook Farm
Dracut, MA

Cover
Letter of Introduction

Appendices
- Structural Condition Assessment, Roome & Guarracino, Structural Engineers, 14 pp
- Existing Conditions Plan Sketches, Johnson Roberts, 4 pp
- Project Notification Form, Massachusetts Historical Commission, 2 pp
- Meeting Minutes, Beaver Brook Farm Committee, 10 Mar 2016, 3 pp

Attached by reference:
- Conditions Assessment: Beaver Brook Farm, 761 Mammoth Road, Dracut, Massachusetts, Brian Pfeiffer (attributed) 2016 (date assumed) 52 pp (in the copy we received)
- Historic Preservation Plan & Town-Wide Survey of Historic Resources for Town of Dracut, Middlesex County, Massachusetts, Larson Fisher Associates, November 2012, 402 pp
- Form A - Area, Massachusetts Historical Commission filing, DRA.3, 27 Oct 1989, 6pp
- Form B - Building, Massachusetts Historical Commission filing, DRA.3, DRA.110-114 & 910, Dec 2016, 19pp

Non-Text Page

SUMMARY

Of the two structures reviewed, the Seedhouse and the Workshop Complex, the Seedhouse is in much better shape, but still has significant structural failure and water infiltration issues that need to be resolved immediately to prevent additional damage. There are sections of the Storage Barn floor that have compromised and may not be safe to walk on, and sections of the ceiling finish in the basement have collapsed. Extreme caution should be used when entering. Refer to the section titled **Caution**, immediately hereafter.

Seedhouse: Temporary repairs could be undertaken which would put off the cost for restoration to a later date, but not indefinitely. Restoration to a point where the Seedhouse structure will remain stable for a period of years, will likely cost in $250,000 to $350,000 range for construction, plus so-called soft costs.

Salvaging and restoring the Corn Crib, the oldest, most historically significant portion of the Seedhouse structure, and demolishing the remaining structure is likely to be in the $125,000 to $150,000 range, plus soft costs.

Demolition of the entire Seedhouse is likely in the $60,000 range, plus soft costs.

Stabilization and mothballing only, without knowing the full scope, could be in the $75,000 to $100,000 range, plus soft costs.

Workshop: The Workshop Complex was destroyed by fire in 1972, nearly 50 years ago, and only small sections survive and appear to have been hastily enclosed to buy time. The useful life of these temporary enclosures has passed, in some cases, decades ago. The membrane roof over the Blacksmith Shop is gone, and the membrane roof over the central section, which provides cover over the Cellar area, has large holes and is pulling away from the vertical walls, allowing water to pour into the structure. The roof over the Sawmill also has large holes through the roof deck. The damage is severe, and the structure is unsafe to enter in our opinion. Refer to the section titled **Caution**, immediately hereafter.

Stabilization is probably not feasible given the extent of the damages to the Workshop Complex, and demolition, or partial demolition and reconstruction of what currently remains is likely to be in the $1.6 to 1.8 million range for construction, plus soft costs. Reconstruction of the Workshop Complex as it existed prior to the fire is likely in the $5.5 to $6.0 million range for construction, plus soft costs, although it is possible to do for less if it remains as an unheated agricultural outbuilding, though what use the town may have for such an investment is unknown.

Demolition of the Workshop Complex is likely in the $130,000 range, plus soft costs.

A hazardous materials survey should be undertaken before any demolition, or construction work is undertaken, however this may not be strictly necessary if only emergency repairs are undertaken such as adding props, temporary enclosures, etc. Allowances for the cost of hazardous materials abatement should be assumed for any substantive project moving forward.

Before any additional work is undertaken, including demolition, additional study and design work will be required to determine actual budget numbers for the costs of the proposed work. The estimates included herein are order-of-magnitude only, for discussion purposes as an aid for decision making. Some additional detail on how the order-of-magnitude estimates were generated is included hereafter in the section titled **Analysis**.

CAUTION - IMMEDIATE ACTION MAY BE REQUIRED

There are segments within both the Seedhouse and the Workshop Complex that have completely collapsed or are in danger of collapse. The membrane roof has torn away from the Workshop building in a number of places, especially at the west over the Blacksmith Shop, and water is entering unchecked.

We recommend that the Dracut Fire and Building Departments review the existing structures to determine if structural hazard placards should be installed, per 527 CMR: Massachusetts Board of Fire Prevention Regulations, (NFPA 1, 2015 Edition w/ Massachusetts Amendments) §10.12.5.1 either Type 1, or Type 2 indicating the open holes in the floor, roof, and potential for further collapse. Further, we recommend that no entry be granted to these structures except by professionals, who are aware if the structural issues present, and with extreme caution.

Additional details are included below, under **Analysis**.

SCOPE AND METHODOLOGY

Johnson Roberts Associates was tasked with reviewing the existing conditions of two of the four remaining outbuildings on the Beaver Brook Farm property owned by the Town of Dracut, to report on our findings, and to include the review and analysis of a structural engineer, specifically to determine what the capacity of the existing structural elements within these two building are, generally, and to advise on the costs to repair these buildings to prevent further degradation, or to improve them for possible reuse. Because the possibilities of adaptive reuse can vary widely, we have kept our recommendations basic. It is beyond the scope of this report to determine the entirety of the issues and problems that may exist in historic properties such as these, and if additional work (repair, restoration or adaptive reuse) is considered, additional study and/or design work will be required.

The estimates included in this report are "order-of-magnitude" only and should be used only as intended: for discussion purposes to assist in determining the best way forward. The estimates included in this report should not be used to establish a potential construction, demolition, or project budgets; however every attempt has been made to use numbers that represent real world construction costs, based on publicly bid work under MGL c. 149, included Prevailing Wage Rates.

We visited the site twice, on 31 Aug 2021 and again on 10 Sep 2021 with our structural engineers, Roome & Guarracino LLC. We prepared plan sketches of the existing structures and photographed the existing conditions during both trips. Our annotated plan sketches and representative photographs are included in this report. Destructive testing, and partial demolition was not used to uncover concealed conditions at the site, and our observations, and those of our structural engineers are based on the information visible and readily accessible. Where access to concealed spaces, such as attics, crawl spaces was not readily available and/or could not be undertaken safely, those spaces were not reviewed firsthand. Some observations were limited due to existing conditions, including sagging and collapsed structures, inaccessible spaces, lack of lighting (with the exception of the Apple Cellar) and boarded windows.

Framing analysis and structural issues are included in the report by Roome & Guarracino which is attached to this report. Johnson Roberts also noted a number of structural issues which are included in our report, and noted in some cases on the plan sketches, which are also included in this report. This report is limited in scope and is intended to establish the issues present within

the two barn structures we were asked to review in general terms, and inform the discussion concerning the next steps for these two structures. Depending on the outcome of these decisions, it is likely that more study or effort will be required to determine the actual design and costs of any future project which includes these buildings.

BEAVER BROOK FARM

Beaver Brook Farm, formerly known as the Richardson Farm, was purchased by the Town of Dracut in 2015 for $2.8 million dollars, mainly using Community Preservation Act funds. [1] The original farmhouse of 1735 built by Abraham Varnum has had a number of renovations and additions, including when Justus C. Richardson took over the property in 1841. Eventually George Richardson took over the management of the property until his death in 2013. [2] The 24-acre property includes the original Varnum-Richardson farmhouse and a number of outbuildings, and the more recent addition of victory gardens and walking trails.

We reviewed two reports and a number of articles in newspapers and periodicals for this report and have included those sources in the footnotes where appropriate. The two reports we reviewed include *Conditions Assessment: Beaver Brook Farm, 761 Mammoth Road, Dracut, Massachusetts*. This report (Pfeiffer Report) was given to Johnson Roberts electronically, and appears to be incomplete. There is no cover page, author or date on the pages (52 pages) we were given. A web search appears to indicate that this report was prepared by Brian Pfeiffer, an independent architectural historian and founder of the web archive Archipedia New England. Based on the 10 Mar 2016 meeting meetings we found, [3] it appears that this report was completed in 2016, for the Beaver Brook Farm Committee. Mr. Pfeiffer was present at that meeting, and discussed his findings and recommendations, which includes the following note:

> "Mr. Pfeiffer is suggesting that getting the water away from the buildings in a first priority and that the Committee may want to consider demo of the buildings that have no use and there is no money to repair." [4]

The second report we reviewed, *Historic Preservation Plan & Town-Wide Survey of Historic Resources for Town of Dracut, Middlesex County, Massachusetts*, prepared by Larson Fisher Associates, of Woodstock, NY, and dated November 2012. Because this report (Larson Fisher Report) is town wide, the information concerning Beaver Brook Farm is limited in scope.

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[1] Steucek, Guy, *Conway School Helps Redefine Historic Farm.* Lancaster Farming. Web. 31 May 2019. https://www.lancasterfarming.com

[2] Brighton, Prudence, *Dracut: Sale of Beaver Brook Farmhouse lingers over paperwork*, The Lowell Sun. 5 Aug 2021. Web. https://www.lowellsun.com

[3] A copy of the 10 Mar 2016 meeting meetings of the Beaver Brook Farm Committee is included in the Appendices.

[4] Ibid

Due to the size of these two reports, they are not included in the Appendices of this report, but we attach them by reference.

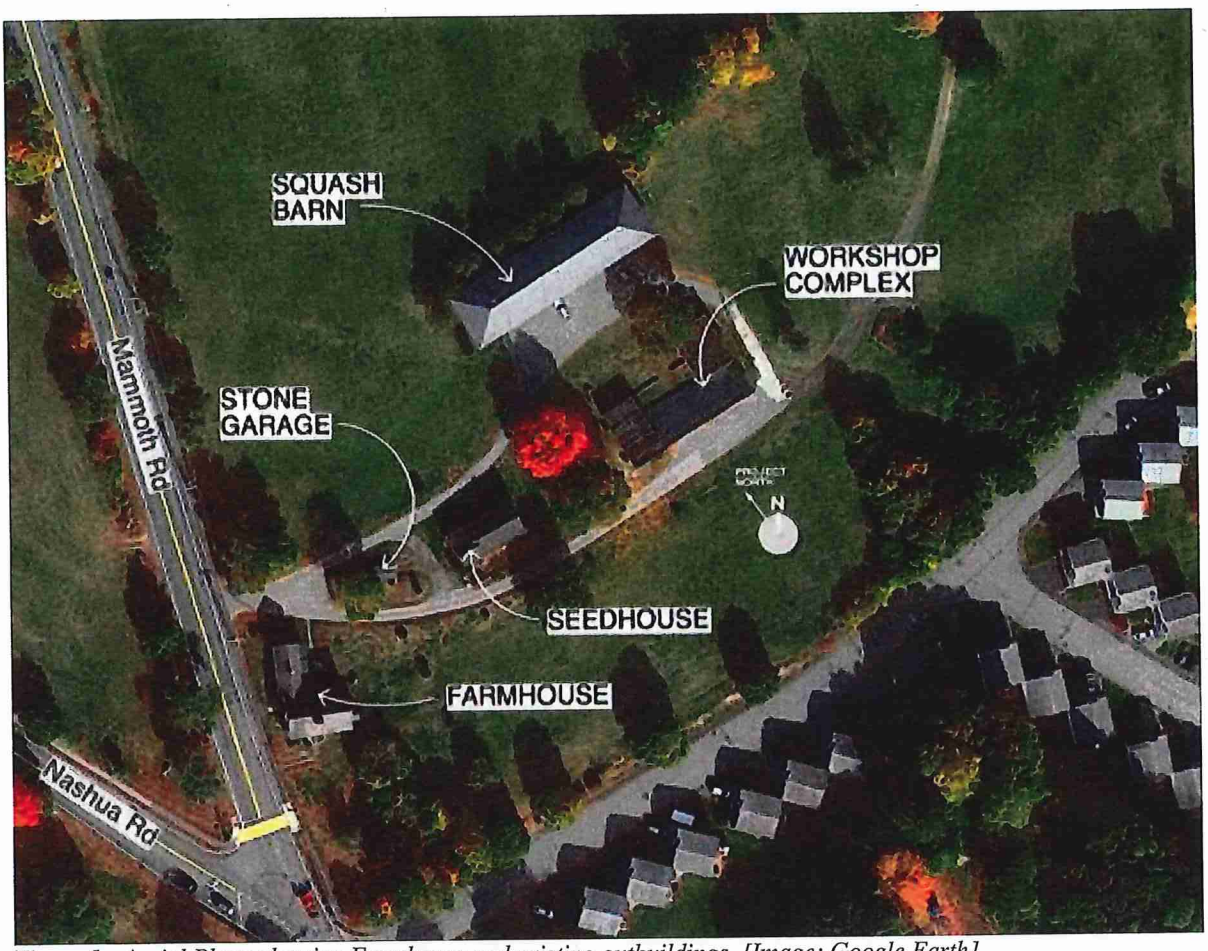


Figure 1 - Aerial Photo showing Farmhouse and existing outbuildings. [Image: Google Earth]

Only the Seedhouse and the Workshop Complex are included in this study. Each of these structures has a complicated past of construction, additions, renovations, fire damage and destruction, and subsequent repair which complicates the review somewhat. Further, the structural system in each of the structures and additions differs slightly, but there are similarities which seem to indicate that they were built by or under the direction of the same person or family, and perhaps by the farm owner and/or personnel which is not uncommon.

Dimensional lumber framing systems for example are typically 2" x 4" stud walls set at 24-inches on centers, and roof rafters are typically 2" x 6" at 24-inches on centers, but this is not the rule. Wall and roof sheathing are typically wood (pine) boards of random widths. There are some

areas where horizontal girts have been added to widely spaced vertical framing and corrugated metal added in lieu of wood sheathing and clapboard. This may have been after a fire. Many areas where this enclosure system in employed have large gaps, open to the outdoors, and very little lateral bracing. Note that inch-marks (") are used to indicate that the dimensional lumber is the actual size, vs. the contemporary notation of a 2 x 4, for example, which is 1 1/2" x 3 1/2" actual.

A report of the existing conditions of the two structures follows immediately hereafter, and additional information and conditions reporting is included in Roome & Guarracino's report, attached to this report. The two structures include the Seedhouse and the Workshop Complex. Each of these two structures can further be broken down into three segments, as shown in the image below:

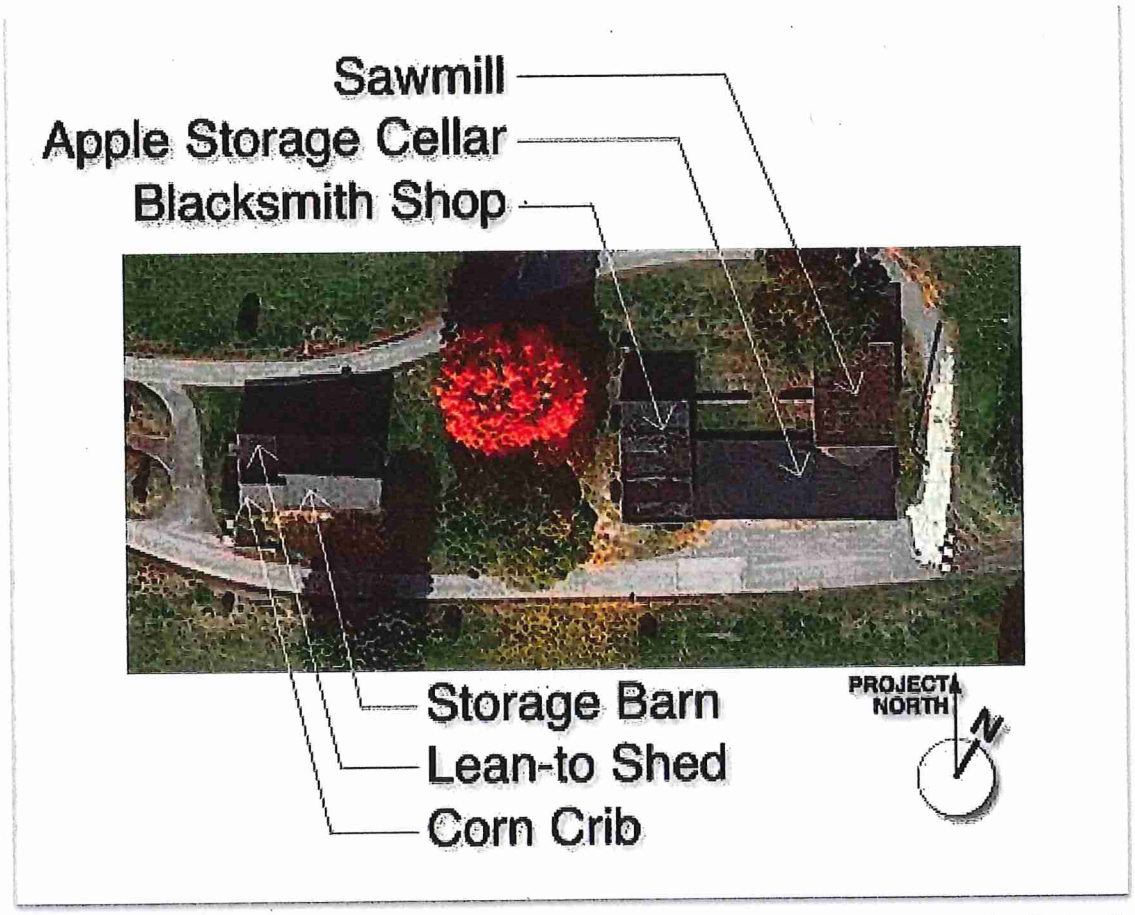


Figure 2 - Seedhouse is on the left (west) and the Workshop Complex is to the right (east.) Note that Project North has been set orthogonal to these two structures for the purposes of this report. [Image: Google Earth]

SEEDHOUSE

Figure 3 - Seedhouse Building, note horizontal dark line where greenhouse framing used to attach

The Seedhouse, also referred to as the Corn Crib and/or the Greenhouse and/or various combinations of these names, is a wood framed structure in three parts, constructed over a period of time beginning with the Corn Crib ca. 1790 - 1820. A Storage Barn was added ca. 1900 - 1910, and the small angle left between the two, was later filled in with a Lean-to Shed ca. 1920 - 1930. Of the two structures we reviewed, the Seedhouse is in generally better shape, but has serious water infiltration, rot, and structural issues in places. A greenhouse was added as a lean-to on the south and has since been removed. Evidence of where it connected to the Corn Crib and Storage Barn is evident (see figure 3, above.)

This structure has no lighting or electrical power and is unheated, although portions of a tile pipe that may have vented a furnace or boiler are still visible in the southeast corner of both floor levels, but do not currently penetrate the roof. All of the windows are boarded up with plywood panels attached to the exterior.

Additional information on each of the three sections of this structure, the Corn Crib, the Storage Barn, and the Lean-to Shed, follows immediately hereafter.

The Corn Crib is a scribe-rule, roundwood timber framed structure with outwardly splayed walls, square in plan, 15-feet square at the base. The walls splay out about 1-foot in all directions, beginning at the first-floor line, making the building about 17-feet square at the plate line. The jack wall framing below the first floor is plumb and sits on the stone rubble foundation walls, which terminate just above the sloping grade, making the top of the foundation walls, which are stepped as they follow the grade. There appear to have been doors or a door and a window at the south lower level of the Corn Crib and this wall is wood framed here almost full height. These openings in the framing (now boarded up) are allowing water infiltration, and there is some degradation of the framing visible where sections of the siding and sheathing have rotted away on the south east corner, at the joint of the barn addition. There is visible degradation in some of the wood clapboard siding generally.

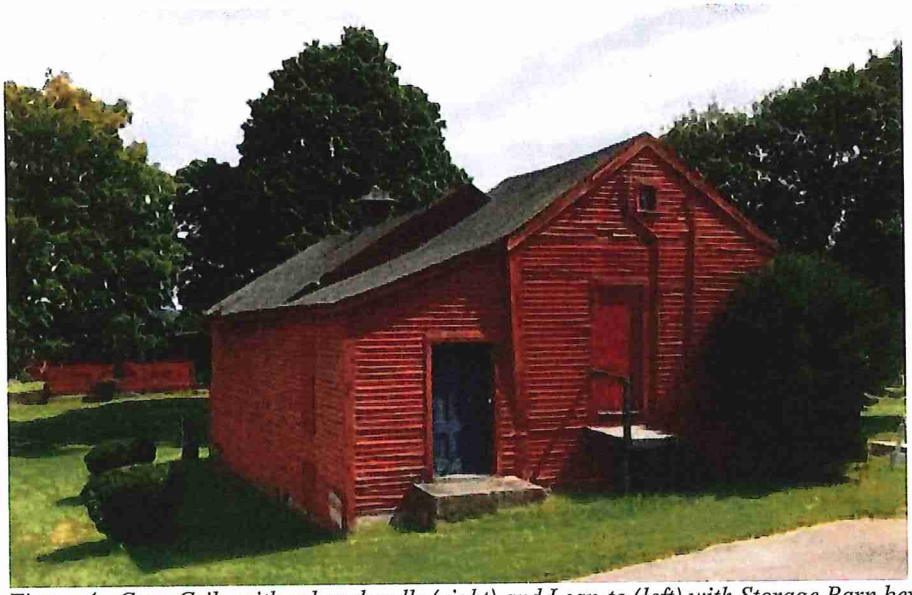


Figure 4 - Corn Crib, with splayed walls (right) and Lean-to (left) with Storage Barn beyond.

The roof of the Corn Crib is gabled, clad with asphalt shingles, and timber framed with trusses at the front wall, center, and rear wall, with purlins between to support the board roof sheathing, which runs eave to ridge. Some of the roof framing members visible through the framed opening in the ceiling have been sistered with dimensional lumber. There is a prop in the center of the room, presumably below the midpoint of the central truss, and a corresponding prop has been added in the basement.

The Corn Crib appears to be the oldest portion of the structure and appears to be in fair shape. The is some visible sagging of the ridge line, which may help to explain the props inside. The interior walls and ceiling at the first floor are plaster on wood lath, the plaster finish terminates at the splayed corner posts, leaving them partially exposed. There are no visible splayed posts at the

mid-points of the north and south walls, where the center roof truss bears, which may also help to explain the sagging ridgeline. The interior of the basement is clad with wood boards, and the ceiling is clad with wood fiber panels, one of which has been removed near the center, exposing the roundwood timber framing.

The Storage Barn structure was added around 1900, according to the Pfeiffer Report, and that structure is substantially larger than the Corn Crib. It sits to the east of and is flush with the lower south wall of the Corn Crib and extends beyond to the north by about 9-feet. This structure is wood framed with dimensional lumber, with some timber beams in two lines, at the lower level. The foundation of the storage barn is also stone rubble, the lower level has a dirt floor, and two lines of peeled log posts set into the soil support the wood beams, which in turn support the dimensional lumber framed floor. The storage barn is gabled (east-west) and roofed with asphalt shingles and topped with a small cupola and weathervane. The exterior walls are finished with wood clapboard and trim, which are showing signs of wear, and in places rot and degradation.

The wall and roof framing are clad inside with wood boards, so the framing is not visible, however the wood cladding follows the roof pitch approximately hallway up the slope, and then runs horizontally down the center, so attachment to collar ties is the natural conclusion. The collar ties are higher in the slope than we would recommend today, which may account for the sagging of the ridge visible from the exterior. There are several wood posts set on the floor, up to the north and south lines where the sloped wood clad ceiling meets the flat ceiling, or where the collar ties meet the rafters. It is unknown if these are props or part of a former storage or organization system. There is a steel tie rod at the eave line, and the approximate center of the Storage Barn (figure 5.)

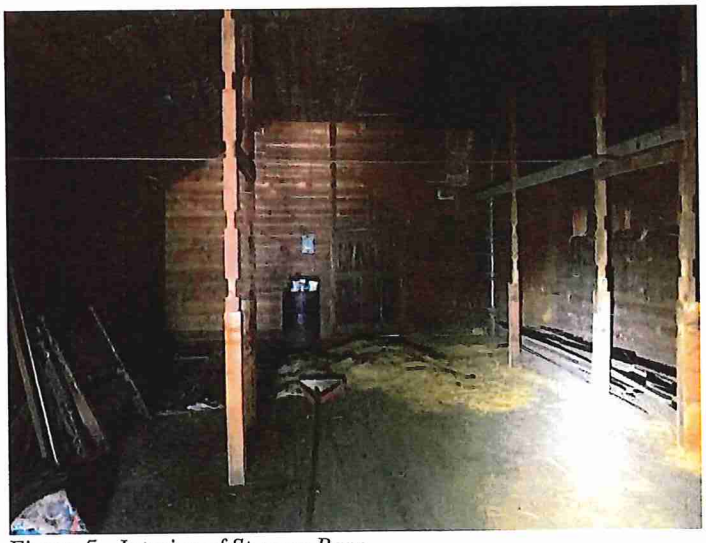


Figure 5 - Interior of Storage Barn

There is a section of the north exterior wall (wood framing and siding) where it meets the Lean-to Shed at the west that is buried below grade. The wood siding visible when the soil was scraped back is degraded. There are signs all along the south wall of the Storage Barn where it appears that soil was piled against the wood siding when planters were added inside the former

greenhouse lean-to (now removed.) At some point concrete was added against the sill of the Storage Barn to contain the soil within the greenhouse planters, and later the remains of the rotted sill were removed. The concrete still bears the impression of the rotten wood sill and its missing segments. Wood props have been added under each of the floor joists along the south wall, which sit (unbraced) on the stone rubble foundation below.

Signs of the former lean-to greenhouse which ran the full length of the south façade of the structure are still visible. The siding below has been removed in some cases, presumably when it was covered by the greenhouse structure, and there are a number of places where openings in the siding allow the elements to enter. The greenhouse framing is stored in the Workshop Complex basement, as is some of the glass from the greenhouse, according to a member of the Public Works who opened the building for us.

Figure 6 - Storage Barn

The asphalt shingles on the Storage Barn roof are generally in poor condition. The roof rafters are visible from the ground where the eaves and a portion of the roof decking have rotted away on the eastern end of the north wall. This opening in the roof has allowed water to penetrate the wall framing, down to the floor framing. Both the wall framing and the floor framing in this area have been compromised and may pose a danger. The Homasote/wood fiber panels attached to the ceiling in the basement, below this area are also collapsing and pose a danger.

The Lean-To Shed appears to have a crawl space below that is not accessible from the basement of the storage barn, so the floor framing is unknown. The interior of this structure is also clad with wood boards so the wall and roof framing are unknown. The foundation and door stoop are concrete and. Generally, the Lean-To shed appears to be in fair condition. There is a grain scale set into the floor near the door to the Storage Barn so that the platform is flush with the floor.

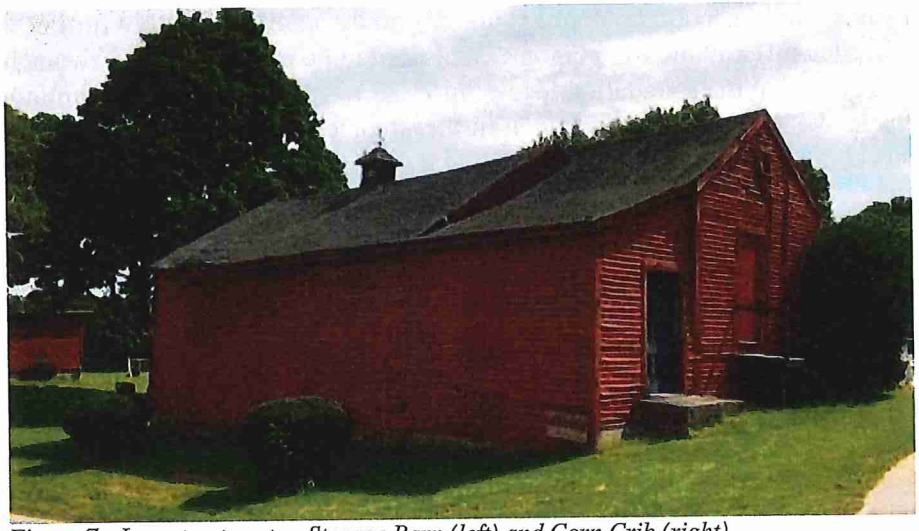


Figure 7 - Lean-to at center, Storage Barn (left) and Corn Crib (right)

The clapboard siding and trim is showing signs of wear, with some displace, cracked and missing clapboard, similar to the rest of the Seedhouse structure as a whole. The asphalt shingle roofing is in fair condition. The concrete foundations, where visible appear to be in good condition, as is the concrete stoop.

SEEDHOUSE - STRUCTURAL ISSUES

When we asked Roome & Guarracino about the loading characteristics of the Seedhouse, they had this to say:

> "The seed house existing floor framing joists just barely handle the assembly live load. The exterior wall studs would need to be doubled up for gravity loading (possibly further strengthening for lateral) and the foundation would need to be improved and new anchors and sill plates installed at the foundation level. Since the walls and the ceiling framing were not exposed those would need to be looked at further to determine if improvements are needed for lateral improvements and snow loading and additional tie-rods might be required."

These assertions come with caveats and assumptions: All rotted, burned, insect damaged, and other degraded structural elements including foundations, sills, collar ties and tie rods, wall, floor and roof framing, including sheathing systems need to be repaired and/or replaced in kind, at minimum, in order for this building to continue its use as an agricultural outbuilding, Use Group U (Utility) per the Massachusetts building code 780 CMR. Any change in use, will require upgrades to structural systems, and may require seismic retrofitting in order to comply with the code depending on what use is determined. Note that adaptive reuse projects which contemplate reuse as a meeting space and/or a museum space, for example would fall under A (Assembly) Use per the code, one of the most restrictive uses, and requiring more complicated and expensive interventions.

Figure 8 - Northeast corner of the Storage Barn wall and floor showing water damage

The northeast corner of the Storage Barn is missing a large section of the overhanging eaves, and a section of the roof immediately adjacent. The sections of the roof framing and sheathing that is

exposed to the exterior show signs of substantial degradation. Water is infiltrating in this area and signs of water damage are evident at the interior and exterior finishes of the wall below down to and including the sill, as well as the floor framing and decking adjacent to this area. Refer to the existing conditions plans and the following photos for more details on the location of the problem areas.

Evidence of a severely rotted sill along the south wall of the Storage Barn is evident, and wood props, set on the top of the stone foundation wall have been added beneath each of the floor joists along this wall. The rotted sill has been removed, and a cast of the former sill is extant in the concrete that was added to the exterior to retain the soil at the planting beds within the former greenhouse structure in this area.

Figure 9 - Rotted sill, trim and clapboard at northeast corner of Storage Barn

The bases of a number of peeled log posts in the basement of the Storage Barn are rotted where they meet the ground.

The floor of the Storage Barn is framed with 2" x 8" (actual) lumber at 24-inches on centers, which runs continuously from one side of the structure to the other, over two lines of wood beams, supported by the aforementioned peeled log posts; an uninterrupted span of approximately 24-feet. The floor decking is wood board; the thickness is unknown. Degradation of the floor framing and decking was noted in the area directly beneath the damaged section of roof at the north elevation. In this area, the ceiling covering in the basement, consisting of 4 x 8-foot sheets of either Homasote or wood fiber board have collapsed, and adjacent sheets are sagging and in danger of collapse. Due to the danger, the exposed portions on the water damaged wood framing in this area was not inspected up close.

WORKSHOP

The Workshop Complex is a structure with a long past of multiple additions, renovations, and fire damage. The exact sequence in which it was built is unclear, but based on the portions of the building at the east and west, with stone rubble foundations, it is possible that there were two earlier buildings that were combined with the construction of the center section, or it's possible that one or more of the many fires that occurred over the years caused damage enough to the center portion of an original larger building to warrant the demolition and replacement of former stone rubble foundations at the center portion and replacement with concrete. It's clear from the photographic evidence that the overall building was a large rectangular structure at one point and portions of it were salvaged and repaired after a fire, whereas other sections were cleared off and a temporary roof structure was added to keep the water out of the basement level (Cellar) where the coolers and cold rooms are.

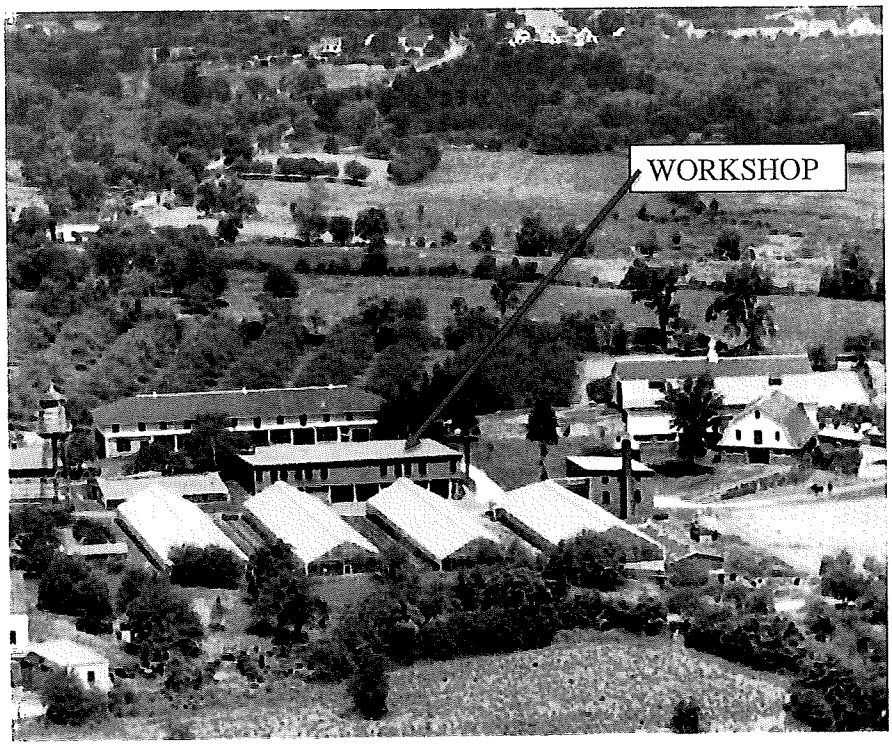


Figure 10 - Aerial Photo ca. 1939 showing the east end of the Seedhouse (left) the Workshop Complex (center) and the Squash Barn beyond. A series of freestanding greenhouses sit in the foreground; those, along with the water tower (left) and the Milking barn complex (right) have since been demolished. [5]

[5] Duda, Rebecca A., 60 years of farming (and lots of Blue Hubbard Squash) at Beaver Brook Farm. 28 Oct 2017. Web. https://blogs.lowellsun.com

The Workshop Complex as it exists today can be broken into three main parts, each with its own entrance: The Blacksmith Shop at the west, the Sawmill at the northeast, and the Cellar in the center with a temporary roof structure over it. Fire damage, water infiltration, rot and insect damaged wood exist in all three sections of the building. There are a number of places within this structure where the floor framing has collapsed completely. Fire and water damage, and rotted wood have severely compromised other portions of the floor framing and some of the roof framing. Much of the framing reviewed by our structural engineer is undersized to begin with, and in its compromised condition it is unclear if the structure will survive the snow loads this winter, or a heavy windstorm, for example.

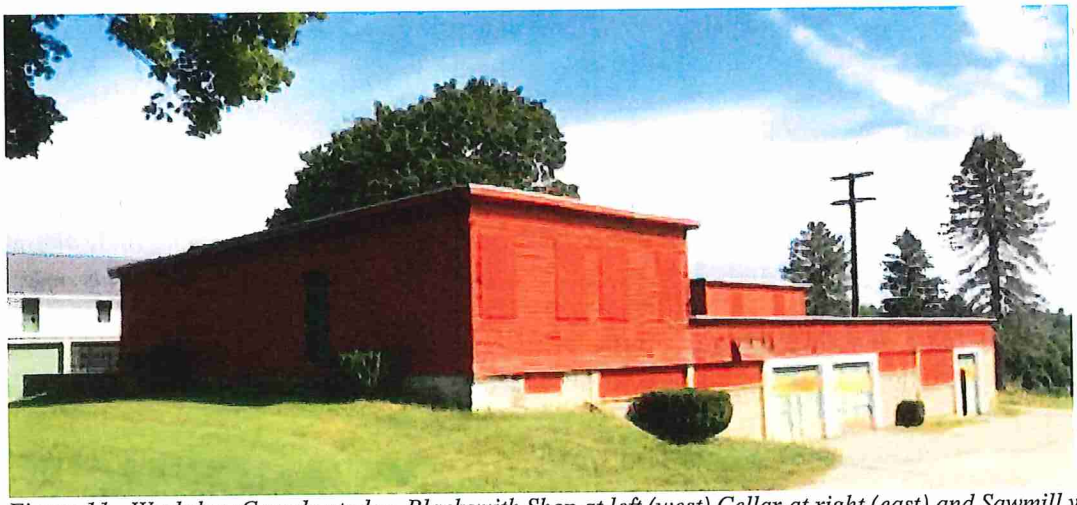


Figure 11 - Workshop Complex today, Blacksmith Shop at left (west) Cellar at right (east) and Sawmill visible above the temporary roof over the Cellar.

The Blacksmith Shop is at the western end of the structure appears to be partially original when compared to the 1939 image (*figure 10, above*) and the ca. 1928 image (*figure 12, below*) the window pattern appears to be the same. The framing and sheathing exposed inside is charred from fire on the western half of the structure, whereas the eastern half appears newer and was there likely reframed after the fire that destroyed the remainder of the upper floor of the building.

The upper floor of the Blacksmith Shop is accessible only via a sliding wood door in the west face. The upper floor wood framing fills the southern two-thirds (approximately) of the structure, and the northern third is a dirt floor, approximately 36-inches below the wood framed floor. There is no stair to serve this lower section, and it appears that this is where the forge may have been located. Below the end of the wood framing is the foundation wall which defines the rear (north) wall of the cold storage rooms in the Cellar, below. The wood floorboards are cupping from water damage and are punky and soft in many locations.

The low-pitched roof over this area extends over the entire area and is supported by wood posts and beams made from nail laminated dimensional lumber. The south and west walls of this section of the Blacksmith Shop are wood clapboard on wood sheathing on 2 x 4 wood studs framing at 24-inches on centers. The east and north walls are corrugated metal on horizontal wood purlins, over widely spaced vertical wood stud framing. No cross bracing was observed in this area. The roof framing is 2 x 6 rafters at 24-inches on centers, which are spliced end-to-end with 1x wood boards scabbed over the joints. The splice boards are approximately 4-feet long, centered on the splices. The splices occur mid-span rather than over a supporting member.

Figure 12 - Workshop Complex ca. 1928, showing Blacksmith Shop section at left (west) end of structure [image: Ebay via Worthpoint]

The membrane roofing over the Blacksmith Shop has blown off completely and the sky is visible between the charred wood roof sheathing boards in places, (figure 13) indicating that the older roofing is also missing in places. [6] The charring has in many cases reduced the cross section of the wall and roof framing members by a significant amount, reducing the load carrying capabilities. The roof framing members are small for the span and spacings used in any case. Char can act as a wood preservative, but prolonged exposure to the elements will inevitably cause further damage to these already weakened structural elements.

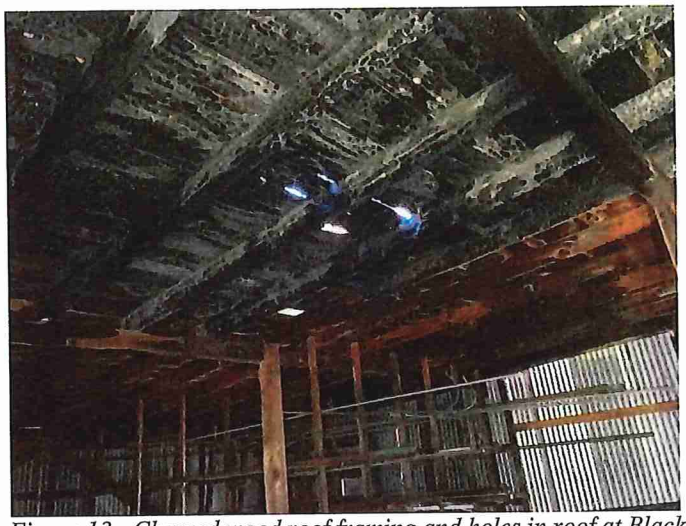


Figure 13 - Charred wood roof framing and holes in roof at Blacksmith Shop

[6] The older roof may have been tar/built-up according to the MHC filing; the Pfeiffer Report indicates that the roof was roof roofing.

The Sawmill is on the upper floor, at the northeast corner of the structure, and again may be what is left of the original enclosure in this area or may be rebuilt in the original location. Based on this photo of Justus C. Richardson at Sawmill (date unknow, but could be the 1920s or 30s), several features of the Sawmill enclosure appear to be the same, including the corrugated metal siding, the wood framing system and cross braces of the walls, the raised floor section beyond and the demising open wood stud framed support, the sliding door, the rip saw station and the small opening in the corrugated metal to allow long boards onto the rip saw, and the 4 x 6 post assembly at the center which helps to support the roof framing as well as the pulley system that runs the saws and the surface planner being used by Richardson.

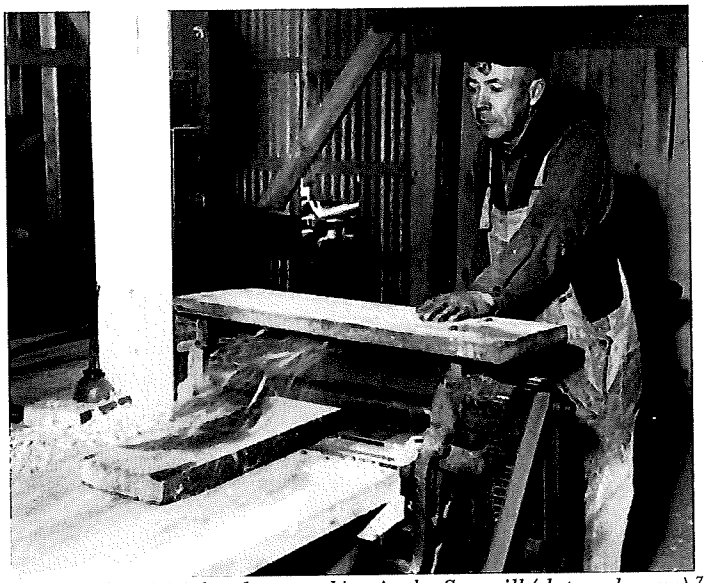


Figure 14 - JC Richardson working in the Sawmill (date unknown) [7]

The Sawmill is accessed via a swinging door served by a concrete stair at the east, and a sliding door at the west, from grade. The floor of approximately two thirds of the sawmill is a concrete slab-on-grade, which shows some signs of surface spalling, but is otherwise in fair condition. The southern third of the space is framed with wood, approximately 30-inches above the concrete slab. This raised section is separate from the lower floor by an open framed wood stud wall, which helps to support the roof framing, two of the studs are missing, and above one of these the plate is visibly sagging at the east. The raised floor area is used for wood storage currently, and one section of the raised floor framing at the southwest corner has collapsed into the cooler in the Cellar, below (refer to plan sketches.)

There is a low sloped roof that pitches to the north, framed with 2" x 6" (actual) at 24-inches on centers. The rafter span from north to south and are supported at roughly third points over the

[7] Duda.

open framed wood stud wall, and a lap-spliced 2 x 6 member supported mid-span by two 4 x 6 posts, which also supported the pulley system that ran the rip saw and crosscut saw. There are at least two holes in the roof at the north, and water is infiltrating into the space and wetting the north wall framing as well as the crosscut saw station. The roof sheathing boards show signs of prolonged wetting and mold and/or moss growth. The windows in the south wall are boarded up at the exterior.

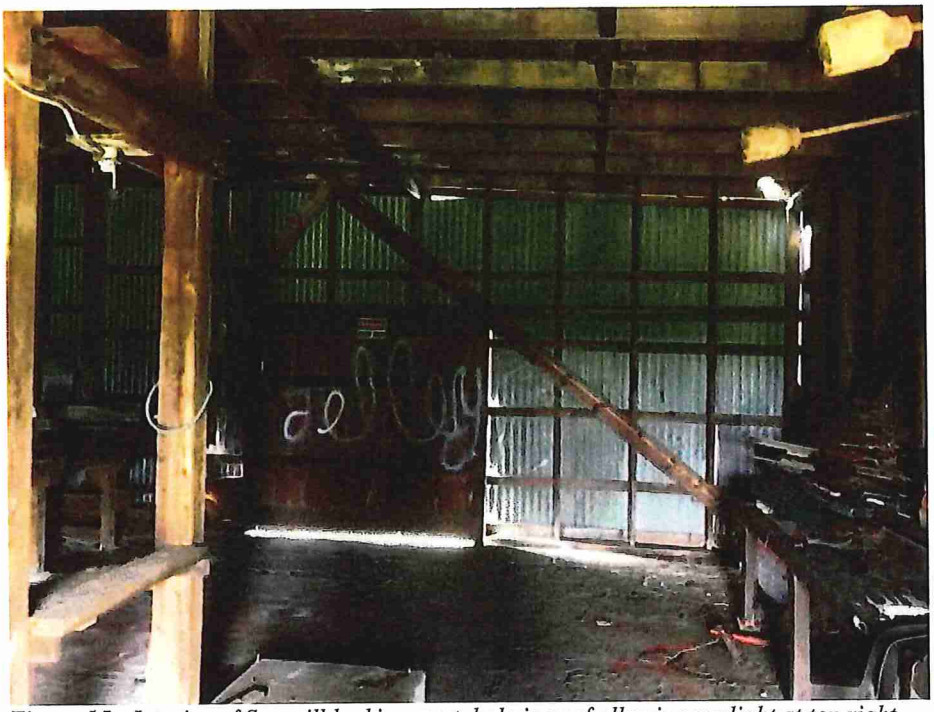


Figure 15 - Interior of Sawmill looking west, hole in roof allowing sunlight at top right

The Cellar, Apple Cellar, or Garage at the lower level of the Workshop Complex is what remains of the ground floor of the former, larger structure. This space extends under the southern two-thirds of the Blacksmith shop to the west, and under the southern third of the Sawmill, and failures of the floor structures in those spaces are visible at this level, and the debris from those collapses is present on the floors in some cases, and still hanging from above in other cases. There is also a large area of the floor above which is covered over by a 'temporary' roof that was added after a large portion of the upper story burned in the 1972 fire according to the Pfeiffer Report.

The foundation walls at the east and west, and the east and west ends of the south elevation are stone rubble, the north wall is concrete. The remainder of the south wall is a series of cast-in-place concrete columns set at approximately 12-feet on centers and infilled with rusticated concrete block up to the sills of column-to-column windows of varying heights, or in the case of three bays, infilled with wooden overhead garage doors (formerly wood sliding garage doors, see figure 16.)

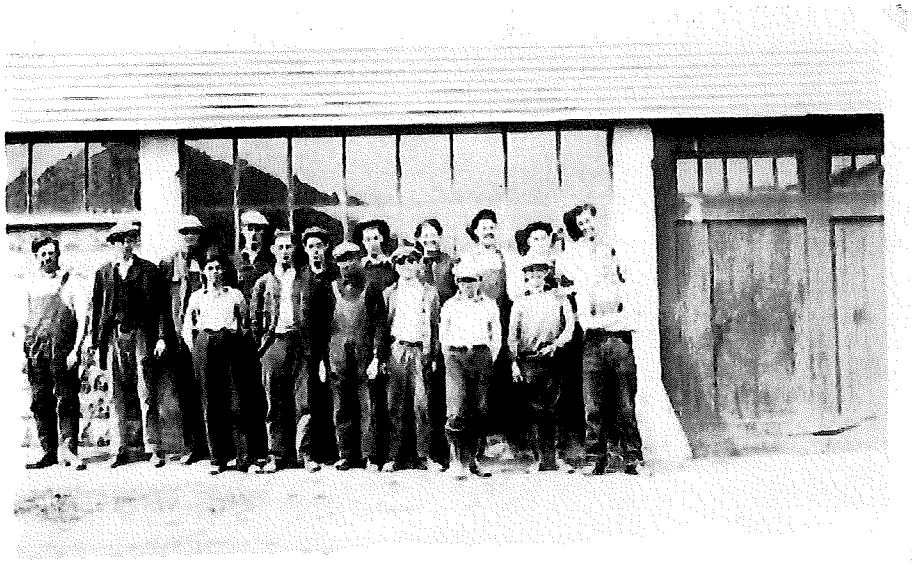


Figure 16 - Laborers outside the south wall of the Workshop Complex. Note the eastern most garage door

There are two coolers in the Cellar: one under the western half of the Blacksmith Shop, and a smaller one under the wood storage area of the Sawmill. There is also a large cold room located partially under the eastern half of the Blacksmith Shop and in one bay of the Garage. The ceilings in the coolers and the cold room are clad with thick cork panels, which act as insulation. In the areas where water has infiltrated from above, the cork panels appear to have absorbed water and held it against the framing preventing drying, once the structure above failed, the weight of the waterlogged panels likely speeded their collapse. In the ten days between our two visits to the site, the remaining portions of the membrane roof over the Blacksmith Shop, and the membrane flashing between the east wall of the Blacksmith Shop and the lower roof were torn

off or opened up in a storm and rain poured into these already damaged areas, increasing the damage visibly in several spaces.

Figure 17 - Structural collapse over cold room. Note mid-span stop-blade scarf joint (splice) in beam (painted white), which is in failure

In addition to the three areas of collapsed framing in the Cellar, there are two additional areas where the wood tongue & groove board finish has been removed or fell from the ceiling and some sistering of the existing floor joists above is visible: with dimensional lumber and hangers (at the east) and with plywood gussets along the north, adjacent to the cooler and westward. At the eastern repair, rotted wood, fire damage and what appears to be insect damage are all present. Rotted wood appears to be the cause of the sistering near the cooler at the north.

An additional section of the tongue & groove board finish between the two (east-west) beam lines was neatly removed, presumably to inspect for further damage or rot. The framing visible in this area appears sound and dry. The framing is 2" x 6" (actual) at 24-inches on centers and spans from the south exterior wall to the concrete foundation wall at the north, supported at approximate third points by two lines of 6 x 6 wood beams set on wood and steel posts. The 6 x 6 wood beams are spliced, mid-span in a number of locations using stop-blade scarf joints, (see figure 18) which is a robust splice connection, but they should sit directly over a support point. Note that it is unknown if the splice joints in these beams are pegged or lagged from above, as shown in figure 18. One of these splice joints has failed, refer to figure 17, above.

The floor of the Cellar is concrete slab-on-grade, and steps down 12-inches at the easternmost overhead door bay to account for the natural grade outside. The concrete is in good condition. The concrete walls appear to be in good condition as well, as does most of the stone rubble foundation, with the exception of some cracking here and there. There is severe cracking present at the exterior of one of the 12 x 12-inch concrete columns along the south elevation, and some patching with hydraulic cement or something similar has been done. The columns do not appear to be reinforced; reinforcing is not visible in the cracking, which is quite deep. The rusticated concrete block infill between the concrete columns does not appear to be reinforced, as light is visible at the joints between the block and the columns, and no connections are visible there. Lack of reinforcing in the concrete columns, and or the rusticated concrete block infill may create a seismic reinforcing issue if adaptive reuse is considered for this structure.

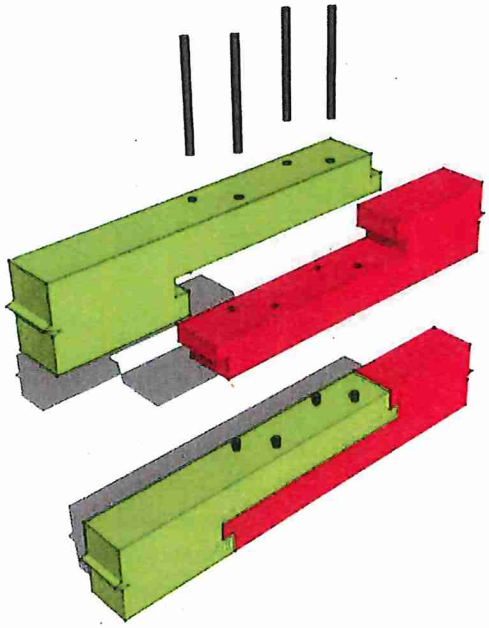


Figure 18 - Stop-bladed scarf timber frame joint, shown pegged [8]

The temporary roof over what was the central floor section of the Workshop Complex is not framed in the traditional sense. There are a number of hinged access panels above the overhead doors on the south elevation, to access this space. One access panel was opened for us on our first visit to the site by a member of the Dracut Public Works department. The temporary roof is held in place with gravity, only. There are a number of dry-laid stacks of concrete block and/or structural tile block, over varying heights, in a grid pattern, set on the former floor. The stacks are higher at the south, and lower as they march northward. Set atop these masonry stacks, are long lengths of thread-joined 3-inch pipe, which run east-west, acting as purlins. On top of the

[8] Cochran, Brice, Image: "Stop Bladed Scarf Joint with Pegs", Web. Downloaded 17 Sep 2021. https://timberframehq.com

pipe purlins are 2x or 3x dimensional lumber, of varying widths, *on the flat,* acting as rafters, clad with wood boards. It is assumed that the wood boards are nailed to the flat rafters, no other attachment between the roof diaphragm and the structure below is evident. It is assumed that the dry-stacked masonry piers sit over the two beam lines below. Inadequate resistance to wind uplift and the lack of bracing of the stacked masonry are significant issues with this roof structure. That said, the portions of the roof structure and what appear to be original floorboards visible from this single vantage point do not show signs of sustained water infiltration or evident failure. A number of openings in the surrounding sheathing/siding system were evident and are visible in figure 19, below, allowing for infiltration of the elements and vermin.

Figure 19 - Space under 'temporary' roof at the Workshop Complex

WORKSHOP COMPLEX - STRUCTURAL ISSUES

We also asked Roome & Guarracino about the loading characteristics of the Workshop Complex, and their recommendation was succinct:

> "The [Workshop Complex] would almost need to be replaced in its entirety because the change-in-occupancy triggers the seismic lateral design check, and the current state of decay. The current lateral system is only the diagonal boards on the walls [of the Sawmill.]"

Of the two structures we reviewed, the Workshop Complex is in substantially worse condition, there are a number of sections of the floor framing and decking that have collapsed. Refer to the floor plan sketches for locations of the damage but note that while the visible extent of the collapsed, sagging, and damaged sections is shown on the drawings, the immediately adjacent areas are also in eminent danger of collapse, to the extent of the nearest uncompromised structural members at minimum. Due to the fact that some of the structural elements are covered, or too close to collapsed areas to approach safely, their conditions could not be readily assessed, and should be assumed to be compromised.

There are significant safety concerns due to the structural failures in this structure. Refer to the section titled **Analysis**, below for additional information. We are recommending that this structure be closed, and considered dangerous until it is either repairs, braced, or demolished.

Figure 20 - Eastern sistered framing at Cellar showing rot, fire, and insect damage

Figure 21 - Collapsed ceiling in small cooler (below Sawmill raised framing)

Figure 22 - Northern sistered framing, props and gussets, showing rot and insect damage

HISTORICAL

The Varnum-Richardson farmhouse was recorded with the Massachusetts Historical Commission (MHC) on October 27, 1989 according to the Form B - Building application filed by Donat. H. Paquat, for the organization noted on the application as D.H.C. which we presume is the Dracut Historical Commission. The application is focused on the farmhouse, which is referred to as the Justus Richardson Homestead in the application, but the outbuildings are noted as well, including the seedhouse, blacksmith shop, sawmill, and "market cellar w/ apple & cold storage" which we believe refers to the lower level of the workshop complex.

There is also a Form A - Area record at MHC for Beaver Brook Farm, dated December 2019, recorded by John D. Clemson, Dracut Historical Commission. The farmhouse and each of the outbuildings are listed, including the seedhouse/greenhouse (DRA.110) and the workshop complex (DRA.112.) Extensive reference in the application is made to the 2016 Brian Pfeiffer report.

Given that these structures are recorded with MHC, a Project Notification Form (PNF) should be filed with MHC before any significant work per 950 CMR §71: Protection of Properties Included in the State Register of Historic Places. A copy of the two-page PNF is included in the Appendices.

If partial or full demolition is considered for one or both structures, we recommend reviewing the buildings and contents for artifacts and elements of historical value that can be salvaged and removed, such as the cooler door in the Apple Cellar, the cupola and weathervane on the Storage Barn, saws from the Sawmill, some of the exterior sliding doors, etc. If salvage operations are anticipated, we recommend adding an allowance in the budgeting for this work.

Depending on the intended use of the property, if demolition of some or all of the structures included in this report is anticipated, it may be possible to preserve the foundations of some or all of the structures being demolished, grade around them to ensure there are no falling hazards and leave them as the footprints of what was there. Informational placards including information and images of the buildings as they once stood could be included. This may reduce the cost of demolition and add to the cost of site restoration by small amounts.

ANALYSIS

Safety Concerns and Immediate Action

As noted at the beginning of this report, significant structure issues including rotted, insect and water damaged materials, as well as the structural collapse of framing, decking sheathing and finish elements are present. To a greater extent within the Workshop Complex.

We recommend that the Dracut Fire and Building Departments review the existing structures to determine if structural hazard placards should be installed, per 527 CMR: Massachusetts Board of Fire Prevention Regulations, (NFPA 1, 2015 Edition w/ Massachusetts Amendments) §10.12.5.1 either Type 1, or Type 2 indicating the open holes in the floor, roof, and potential for further collapse. Further, we recommend that no entry should be granted to these structures except by professionals, who are aware if the structural issues present, and that extreme caution be taken.

The placard symbol Types 1 and 2, mounted in a place visible from the street, and where obscuration from potential smoke or fire is limited, are a warning to first responders, and indicate that interior hazards exist to such an extent that one of two levels of concern and caution are warranted:

Type 1: Interior operations should be conducted with extreme caution, or,

Type 2: Consideration should be given to conduct operations from the exterior only.

Figure 24 - Type 1 Light Hazard

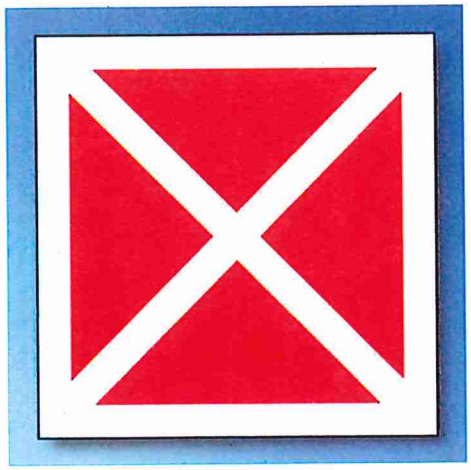


Figure 23 - Type 2 Extreme Hazard

There is a similar requirement in the 2015 International Fire Code, §3.11.5 for placards required for structural hazards, per §§311.5.1 through 311.5.5.

Emergency Repairs: M.G.L. has emergency provisions built into both the designer selection laws, and the public bid laws, which differ slightly in their applicability. Designer selection law defines an emergency as "whenever the health or safety of any persons will be endangered because of the time required for the selection of a designer..." which does not appear to be the case here.

The public bid laws must be followed unless an "extreme emergency" exists, per c. 149, § 44J(6), in which case: "The provisions of this section [44J] may be waived in cases of extreme emergency involving the health and safety of the people and their property, upon the written approval of said commissioner." This provision includes property, in addition to the health and safety of persons, which designer selection law is limited to. However, Designing and Constructing Public Facilities, 2016 Edition, prepared by the Office of the Inspector General, includes this warning, with a citing of supporting case law, which may be seen as apt in this case:

"You may not artificially create an emergency simply by putting off normal maintenance and repair work. If you knew or should have known that a roof needed repair, and you had time to fix it using the normal bidding procedures, you may have difficulty justifying the use of emergency procedures when it starts leaking."

Seedhouse Analysis

It is possible to salvage this building and repair it to prevent further degradation, but significant work will be required to do so. Restoration may also be possible, but more significant work would be required. Adaptive reuse would be the most expensive option, with costs similar to a new construction project of the same size, and perhaps more, if the structure were to be converted to a use with heating, and electricity. In this type of adaptive reuse all new work would need to comply with current codes.

Repairs to the degraded framing, sills, wood posts, new post footings, regrading, patching holes in the envelope, restoration of damaged siding, trim, stairs, removal and replacement of damaged interior wood cladding, additional bracing, and exterior scraping, sanding and painting may range from $100 to $150/SF, two levels at 1200 SF each, totals 2400 SF, or $250,000 to $350,000 construction cost, order of magnitude.

Maintaining the Corn Crib only, which is the oldest, and most historically significant portion of the structure increases demolition costs (due to care and selective demolition) and also requires restoration costs for this 450 SF element. Therefore 1950 SF demolition @ $24/SF = $46,800, plus 450 SF @ $100 to $150/SF or $45,000 to $67,500, which gives a range of $91,800 to $114,300 construction cost, plus site demolition, site restoration and contingencies, order of magnitude.

Stabilization and mothballing [9] only will buy some time, and should only be undertaken, in our opinion, if Restoration is the ultimate goal. At a minimum, stabilization and mothballing will require significant work to stop further degradation and allow the building to last a few years (at most) until the funds and design work are complete for the restoration work. Work required will likely include removing interior wood boarding to expose framing and promote drying, sistering, replacing, and/or propping and bracing damaged framing, patching wall and roof openings, installing louvers in certain window or door openings to promote air circulation and drying. It may also be necessary to add additional props or bracing to support the Storage Barn roof given the less-than-optimal collar tie design.

Demolition: If full demolition is considered, assume $20/SF, or $48,000 for full demolition, plus site demolition and contingencies, order of magnitude.

Workshop Complex Analysis

The structural issues extant in the Workshop Complex are extensive enough that in order to effectively salvage and reuse this structure it would essentially need to be reframed. Because it appears that a large portion of the original framed structure was lost to fire decades ago, and the enclosed portions which remain are limited, our opinion is that any attempt to salvage the

[9] Park, Sharon C., *Mothballing Historic Buildings: Preservation Brief 31*, 1993. National Park Service, U.S. Dept. of the Interior. Web. https://www.nps.gov

historic elements that remain by sistering or replacing framing and other structural elements that are damaged or failed would be substantially more expensive than rebuilding the structure completely. Given that, the question becomes, is what remains historically significant enough to warrant the expense of this type of reconstruction. Our opinion, and it appears to be the opinion of Brian Pfeiffer based on his comments to the Beaver Brook Farm Committee quoted above, is that this structure is not worth the expense of reconstruction.

Other options exist, including the demolition of portions of the building, reinforcing the foundations, and walls that remain and the construction of a new roof. This option will also be expensive as all new work will need to comply with current building codes. Costs for work such as this will be comparable to new unheated, uninsulated new agricultural buildings, which in rough terms would range from $250 to $300/square foot for construction. A project such as this would little or no historic value as the result would be an entirely new building in appearance.

Reconstruction the existing areas only, with no heating, plumbing or fire protection systems, including the lower level (Cellar) which includes approximately 3200 square feet (SF), the upper level, which includes the Blacksmith Shop @ 1000 SF and the Sawmill @ 1000 SF for a total of 5200 SF, which gives a range of $1.3 to $1.6 million construction cost, order of magnitude.

Reconstruction of the pre-fire larger rectangular structure as shown in figures 10 and 12, above, would total approximately 3200 SF at the Cellar, and 6300 SF at the upper level, for a total of 9500 SF, which gives a range of $2.4 to $2.9 million construction cost, order of magnitude.

Adaptive reuse of this structure including a change-of-use, and the addition of new heating, plumbing, electrical and fire protection systems is probably not feasible, and demolition and reconstruction of a new facility of a similar size would be less expensive, and we therefore recommend against this path. Depending on what is included, this option could range from $4.8 to $5.5 million construction cost, order of magnitude. It is also likely that such a facility would bear little resemblance to the historical structure due to the construction techniques, and modern mechanical system, and the wall and roof penetrations required to support those system.

It is our opinion that not enough significant historical fabric remains of this building to make it worth the cost of repair, and we recommend consideration be given to demolition. This route will probably require a review by Massachusetts Historical Commission, and approval from the Dracut Historic Commission.

Demolition: If full demolition is considered, assume 5300 SF @ $20/SF, or $106,000 for full demolition, plus site demolition and contingencies, order of magnitude.

ROOME & GUARRACINO, LLC

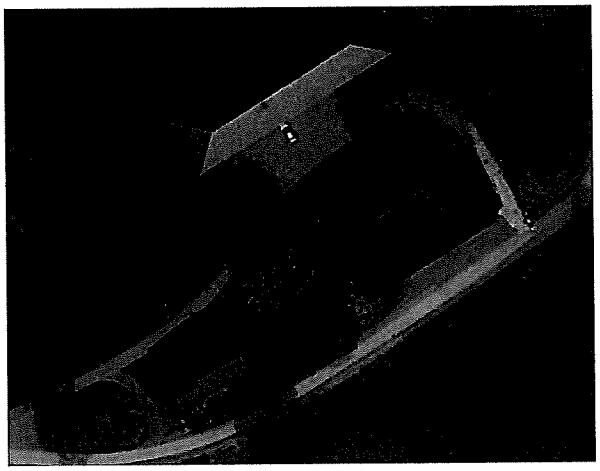
Consulting Structural Engineers

48 Grove Street Somerville, MA 02144

Tel: 617.628.1700 Fax: 617.628.1711

Structural Condition Assessment
on
the Workshop Complex and Seedhouse
at
Beaver Brook Farm

Dracut, Massachusetts



Prepared for:

Johnson Roberts Associates, Inc.

15 Properzi Way

Somerville, MA

ROOME & GUARRACINO, LLC

Consulting Structural Engineers

48 Grove Street Somerville, MA 02144
Tel: 617.628.1700 Fax: 617.628.1711

Date: September 22, 2021
To: Mr. Phil O'Brien, LEED AP – Johnson Roberts Associates, Inc.
From: Carmine Guarracino, P.E.
Project: Workshop Complex and Seedhouse- Beaver Brook Farm
Location: Dracut, MA
Reference: Structural Conditions Report -

Overview

This letter summarizes our findings regarding the present condition of the structures of the Workshop Complex and Seedhouse in Dracut, Massachusetts, as well as, our recommendations regarding repairs and maintenance of this structure. These observations and recommendations are based on information provided to us, as well as, our field observations of September 10, 2021. Existing architectural and structural drawings are not available for the original building and as such, our comments are based solely on our field observations and experience. Our field observations were only visual surface observations and we have not cut any holes in building finishes to verify structure, nor have we done any testing to determine the structures underlying condition.

Existing Conditions

On September 10, 2021, R&G toured the existing Workshop complex and Seedhouse at Beaver Brook Farm with you. The Workshop Complex consists of 3 separate spaces/ buildings: the Garage/Workshop/Cooler, Saw Mill, and Blacksmiths Shop. The Garage/Workshop/Cooler building was at one time two stories tall but was severely damaged by fire a number of years ago and the second floor has since been removed. The structure has a combination of masonry, concrete and rubble walls with wood framed roof. Due to the slope of the existing grade portions of the Saw Mill and Blacksmith Shop are at grade and others extend over top of the Garage/Workshop/Cooler building. Both the Saw Mill and Blacksmith Shop are single story wood framed structures. The Seedhouse is a wood framed structure with a rubble wall foundation.

We proceeded around the perimeter of the Workshop Complex to view the exterior conditions and noted some cracks in the foundation and in the precast columns at the garage doors. See Photo 1. The new rubber roof above garage area and Blacksmith shop has failed and is no longer water tight.

We entered the Garage/Workshop/Cooler building first where we noted standing water on the slab-on-grade. The Cold Room and both cooler rooms have significant water damage and rot which has led to partial collapse of the structure in these locations. See Photos 2, 3 & 4. The wood framing in the coolers and the cold room will need to be fully replaced due to the extent of the rot. Additional sections of the roof framing will need to be exposed and possibly replaced.

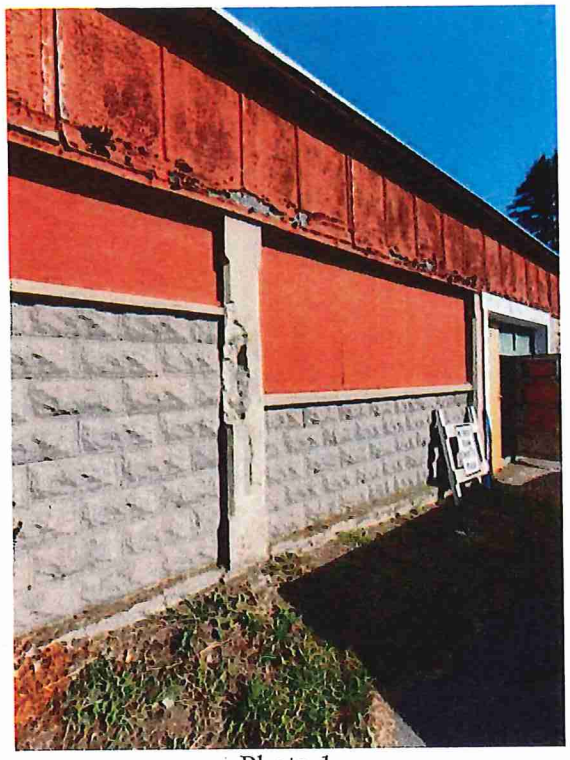


Photo 1.

Photo 2.

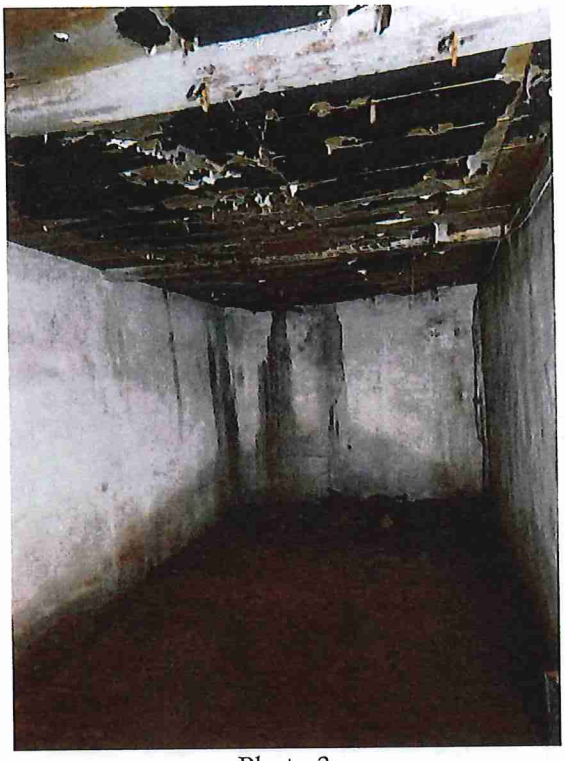


Photo 3.

Photo 4.

In the main garage portion of the building there is an area with fire damage (see Photo 5) and insect damage could be seen in the exposed ceiling along the back wall of the structure. See Photo 6. The roof above the garage is composed of sloping 2x members which are supported on either end of the building and at the center of the building with a stacked wood or brick. This roof system is not sufficient or safe and would need to be fully replaced possibly with new wood truss system. The drainage on the roof would also need to be redesigned.

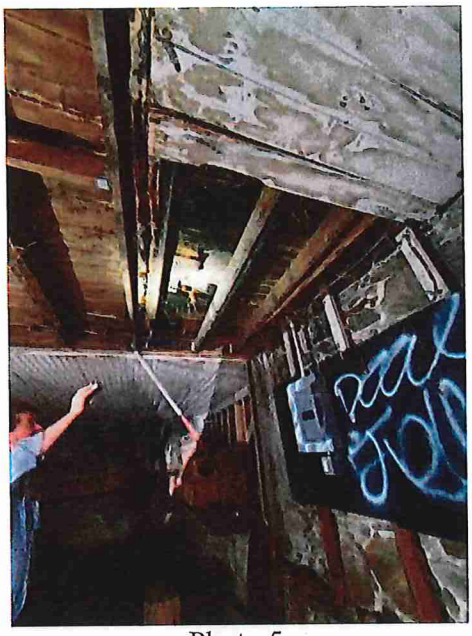


Photo 5.

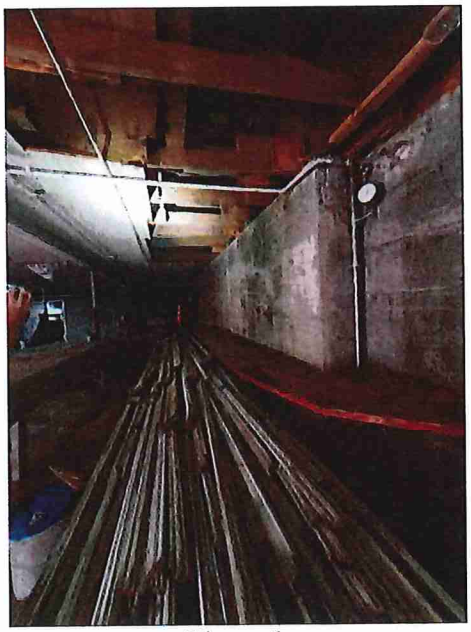


Photo 6.

We then moved to the Saw Mill which is constructed with light wood framing. The Saw Mill work area is slab on grade while the wood storage area is located above the cooler room and the back side of the garage. Three of the four walls have metal sheeting and diagonal 2x6 wood bracing members to resist lateral forces while the last wall has wood board. See Photo 7. There is water damage throughout this room and a few holes were found in the roof which will need to be repaired. The existing roof beam shown in Photo 8 is under sized and will need to be replaced with a new LVL beam.

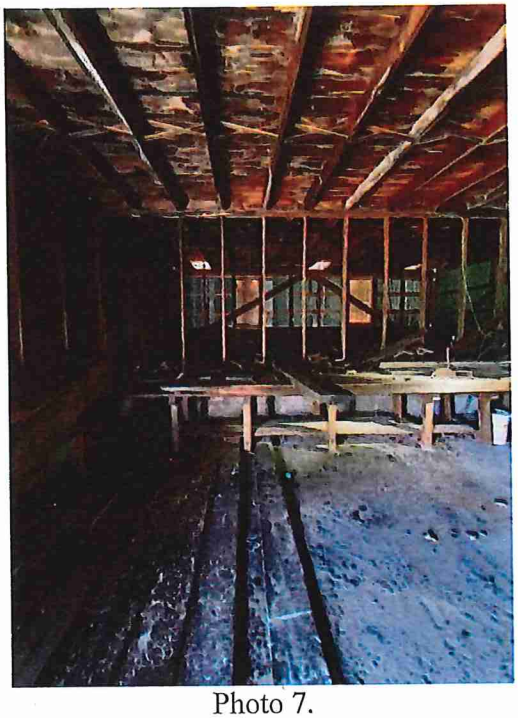


Photo 7.

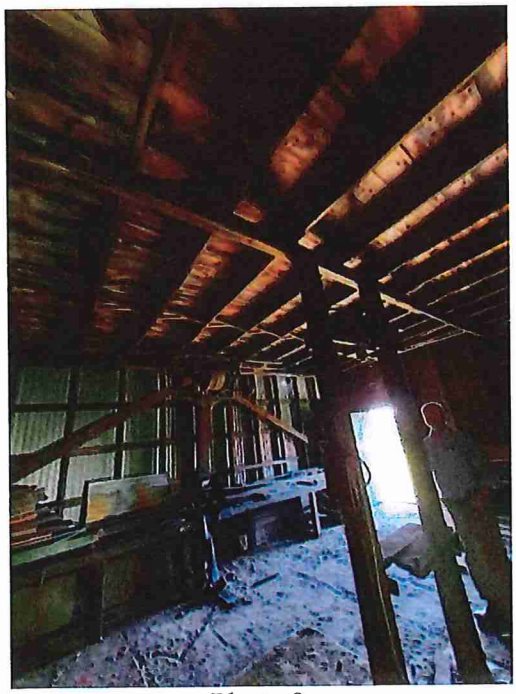


Photo 8.

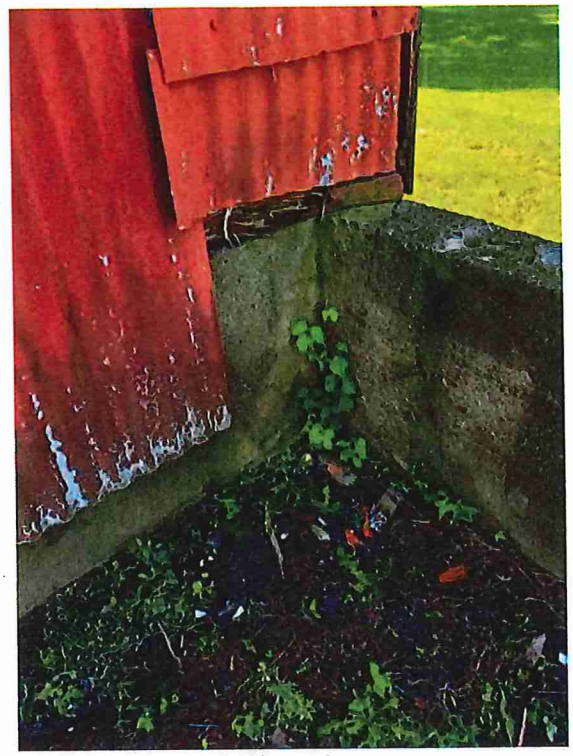


Photo 9.

The rubber roof of the Blacksmith shop has separated from the roof structure leaving it exposed to the weather. Insect damage and rot were found along the exposed areas at the foundation. See Photo 9 above. The exterior of the building is wood clapboard on two sides and corrugated metal siding on two sides.

The interior of the building has sustained fire damage along both wood framed walls and parts of the ceiling. See Photo 10. The main room is located above the cooler and cold room from the garage below where the partial structural collapses noted previously in the report. The floor is not stable enough to support a person therefor all observations were made from the main entrance door. Wood 6x6 beams (assumed) run the width of the building which support the roof joists. See Photo 11. The beams are under sized and are not sufficiently supported at the corrugated metal wall.

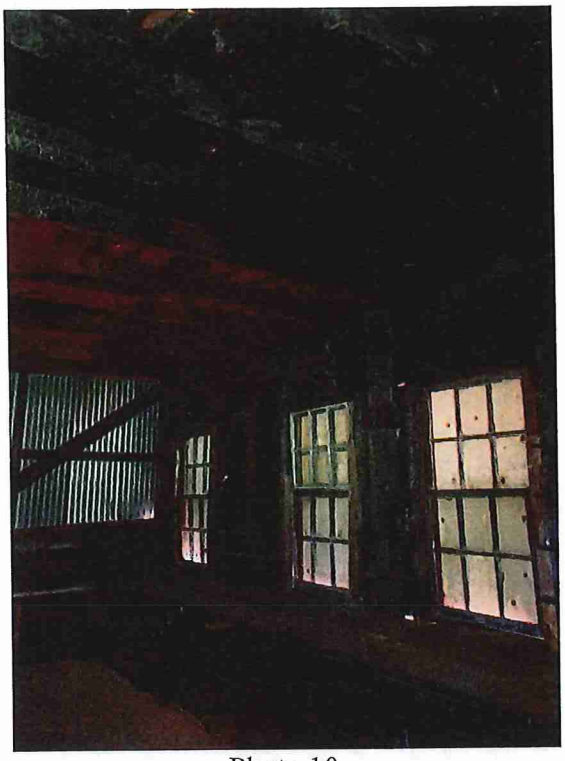


Photo 10.

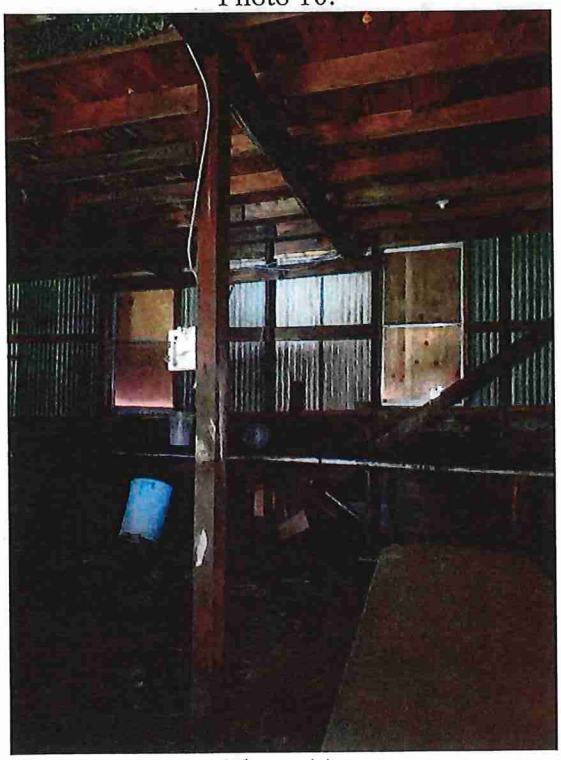


Photo 11.

The Seedhouse appears to be an older balloon framed barn type structure. The exterior of the building shows rot and deterioration at the foundation line and portions of the roof have rotted away completely. See Photo 13. The exterior grade next to the building appears to go above the rubble foundation and comes in direct contact with the wood framing. This area would need to be carefully regraded to pull the soil level away from the wood framing while not exposing so much that would make the foundation wall unstable. Photo 14 shows the location of the previously demolish greenhouse. Further inspection of the wall studs on this face of the building would need to be preformed to determine if the prolonged exposure to the heat and moisture from the green house caused any significant damage.

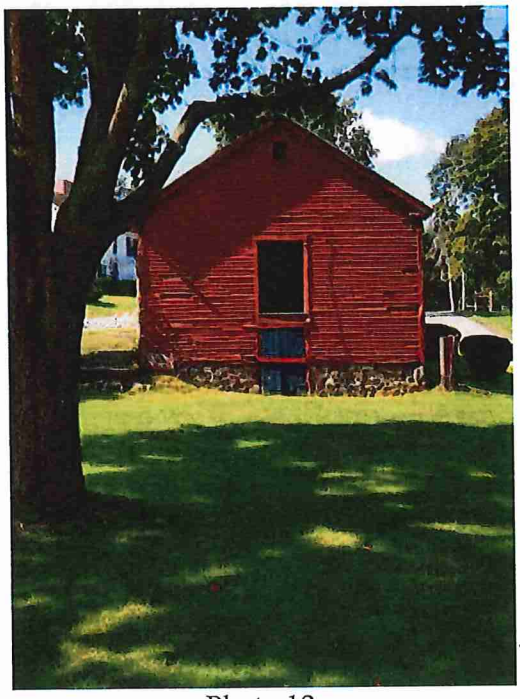


Photo 12.

Photo 13.

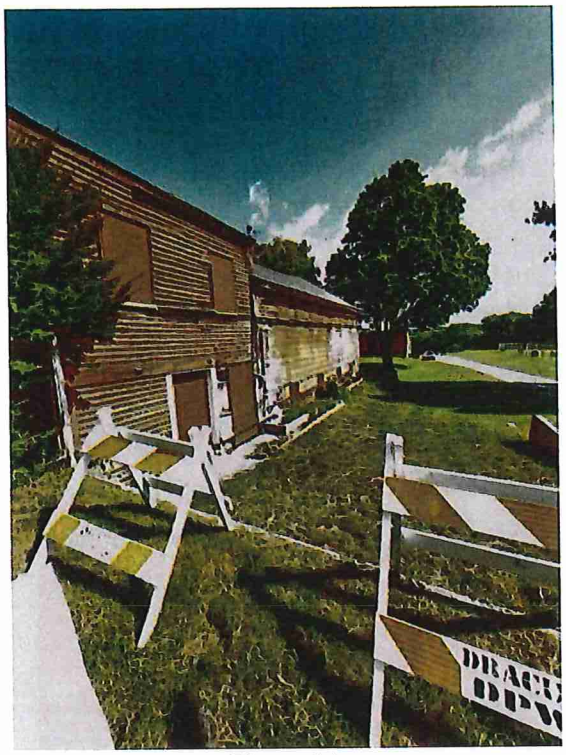


Photo 14.

The interior of the building is clad in wood planks making it impossible to asses the condition of the wall structure without selective demolition. It is unclear if the wood posts shown in Photo 15 below are structural but we believe they are part of a previously used rack storage system. Further investigation of the roof framing in the attic would need to be preformed to confirm the structural capacity of the existing roof system. There is a metal tie rod running through the center of the building which prevents the exterior walls from bowing outward.

The interior of the original corn crib room has been plastered over. The ceiling appears to be sagging in the center and supported by a temporary steel column. This room was designed with all exterior walls sloping inward at the base. See Photo 16.

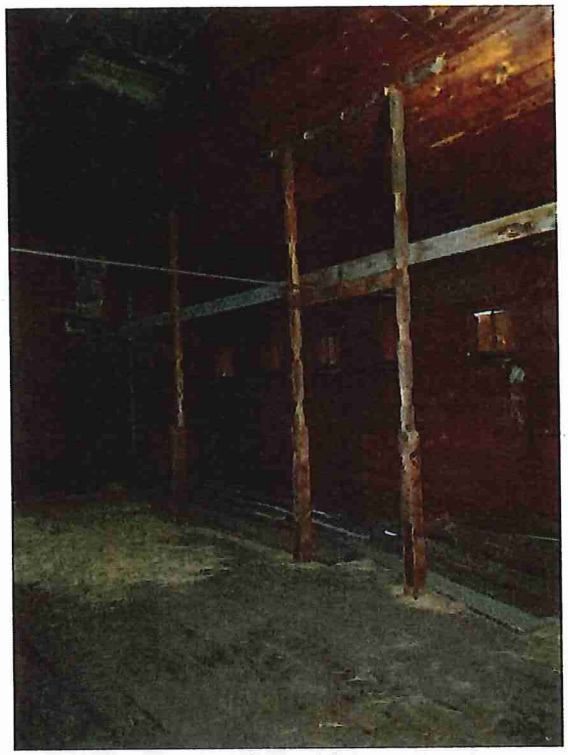


Photo 15.

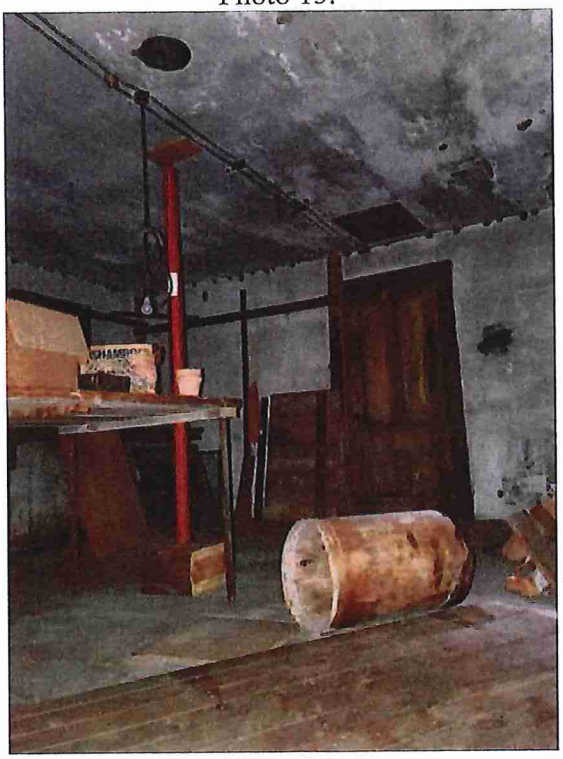


Photo 16.

In the basement it was determined the floor above is supported at the center by two rows of timber posts of varying diameters. See Photo 17. These posts are set directly in to the earth and few show signs of rot at their base. The 2x8 floor joists are support at each wall by a physical connection to each wall stud as is typical with a balloon framed building. The original studs have been cut and sistered to new studs which either bear directly on the rubble foundation wall or on top of loose bricks as shown in Photo 18. Water damage can be seen in the basement below where portions of the roof are missing. Portions of the wall at the first level need to be exposed to determine if the wall structure is compromised.

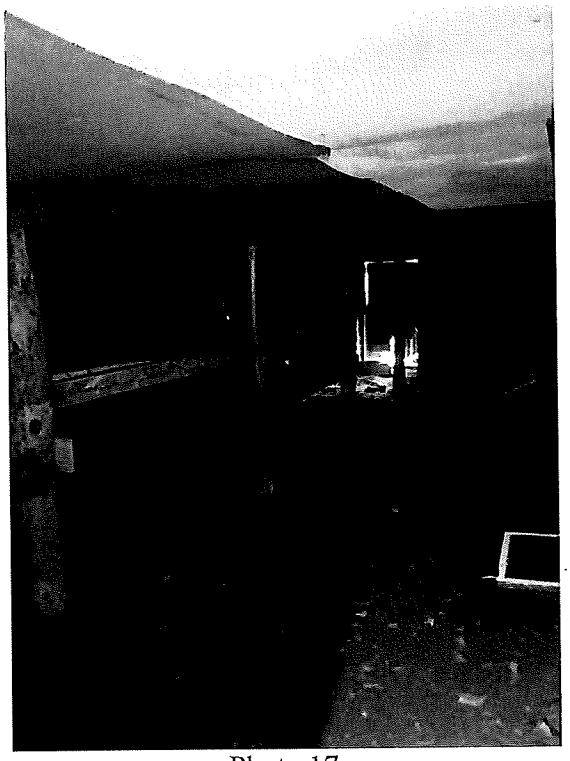


Photo 17.

Photo 18.

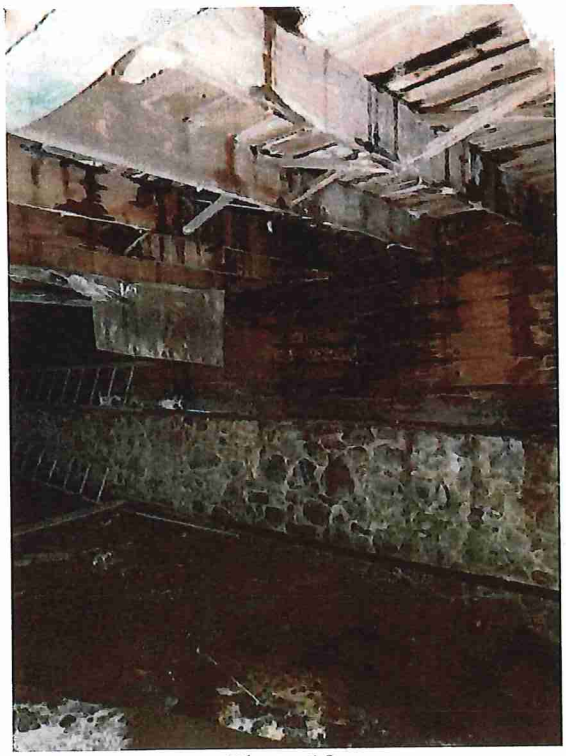


Photo 19.

Assessment of Existing Conditions

The Workshop Complex shows major signs of structural distress. The building in its current state is not safe for occupancy. Additional areas of the Garage/Workshop/Cooler building should be exposed to determine how much additional framing has been compromised by water, rot, fire and insect damage. The roof installed after the fire is not structurally sufficient to resist the design snow load and is allowing water to pool within the structure causing further decay and deterioration. The Blacksmith shop does not have any salvageable structure left after the fires and water damage. The Saw Mill will need to have beams replaced and the exterior walls reinforced to resist lateral loads and roof loads. The wood storage area will need to be investigated further to determine the extent of the damage that has caused the ceiling to collapse in the cooler room below.

The Seedhouse Building has water damage and rot the extent of which will need to be investigated further by exposing the walls on the inside. In order to bring this building up to code the existing foundation would need to be reinforced, pouring new footings, replace compromised wood posts, anchor bolts and tie-downs installed, compromised wood framing replaced and wood walls reinforced.

Our review of the existing structures indicates that the damage noted is substantial and due to a structural deficiency. Moisture, fire, insect and water infiltration are the main causes for the deficiencies noted. The existing structures are not sufficient to support the required snow loading and an increase in occupancy loading for assembly purposes. According to Chapter 3 of The International Existing Building Code if the damage noted to the structure is not caused by wind, seismic, snow or other structural overload, then structural upgrades to the current IBC requirements are not required. The damage caused by rot or deterioration, for example, should be repaired to no less than its original design condition.

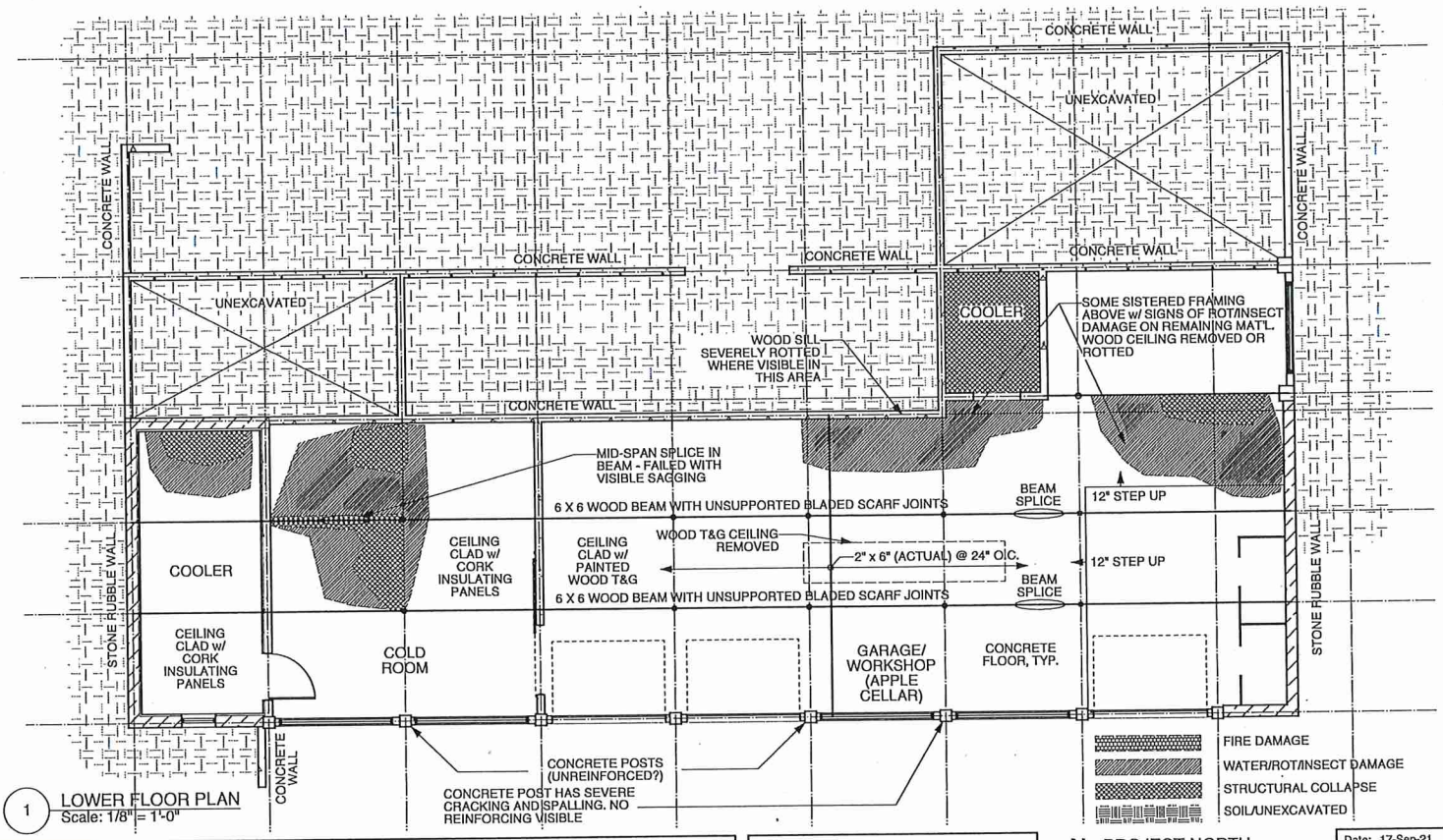
Lastly, compliance with Appendix A1 of the International Existing Building Code is required since there will be a change of occupancy and the work involves more than 50% of the aggregate area of the building.

If you have any further questions, or if we can be of any further assistance, please feel free to call.

Very truly yours,
ROOME & GUARRACINO, LLC

Carmine Guarracino, P.E.
Partner

CG:cg



1 LOWER FLOOR PLAN
Scale: 1/8" = 1'-0"

JOHNSON ROBERTS ASSOCIATES INC.
ARCHITECTS
15 PROPERZI WAY
SOMERVILLE, MA
02143-3228

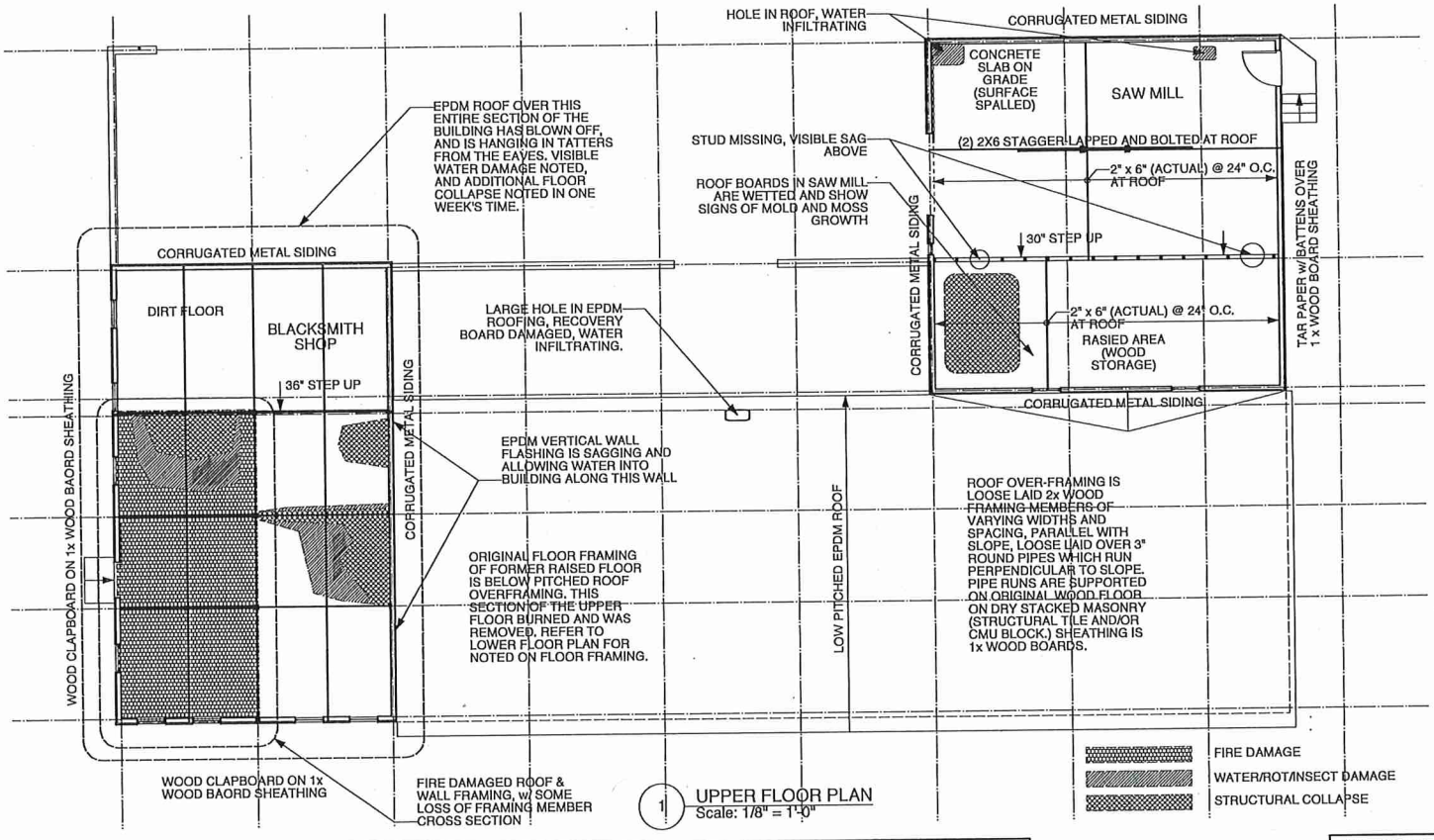
Existing Conditions Report
Workshop Complex and Seedhouse Structures
BEAVER BROOK FARM
Dracut, Massachusetts

Title:
WORK SHOP COMPLEX
LOWER FLOOR PLAN

N PROJECT NORTH

0 10 20 FT

Date: 17-Sep-21
Scale: 1/4"=1'-0"
Drawn By: PHILO
Sheet No.:
A-1



1 UPPER FLOOR PLAN
Scale: 1/8" = 1'-0"

JOHNSON ROBERTS ASSOCIATES INC. ARCHITECTS
15 PROPERZI WAY
SOMERVILLE, MA
02143-3228

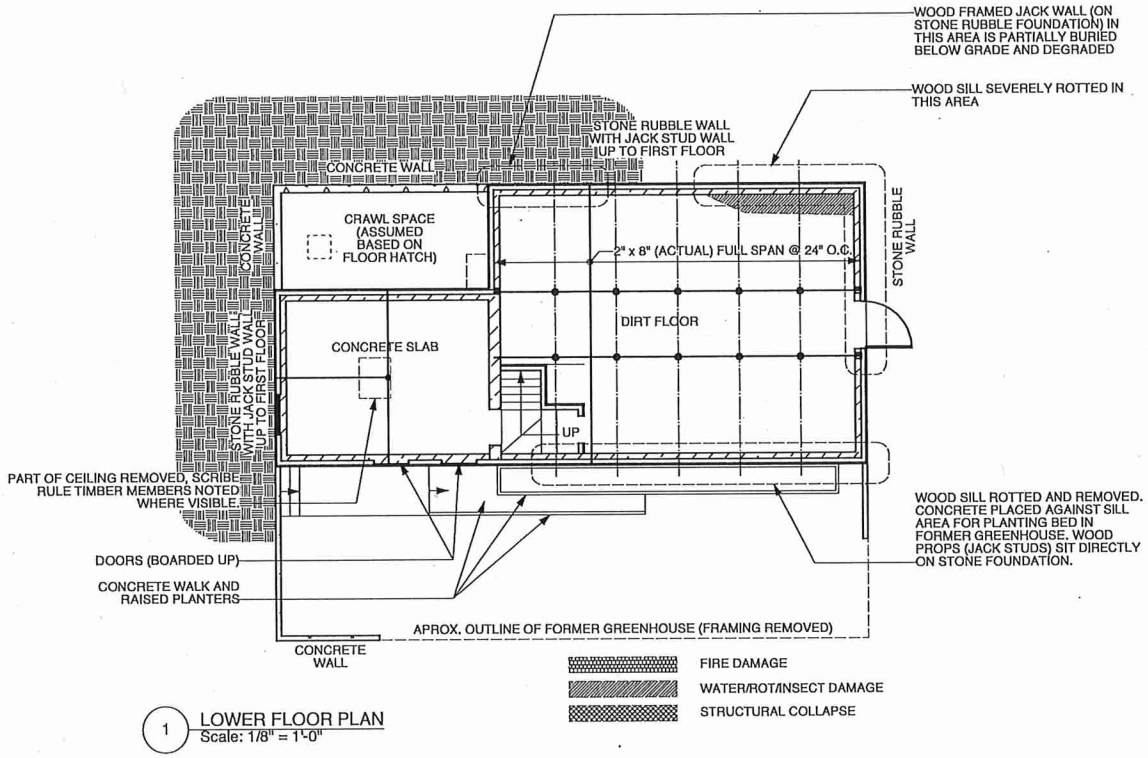
Existing Conditions Report
Workshop Complex and Seedhouse Structures
BEAVER BROOK FARM
Dracut, Massachusetts

Title:
WORK SHOP COMPLEX
UPPER FLOOR PLAN

N PROJECT NORTH

0 10 20 FT

Date: 17-Sep-21
Scale: 1/4"=1'-0"
Drawn By: PHILO
Sheet No.:
A-2



1 LOWER FLOOR PLAN
Scale: 1/8" = 1'-0"

JOHNSON ROBERTS ASSOCIATES INC. ARCHITECTS
15 PROPERZI WAY
SOMERVILLE, MA
02143-3228

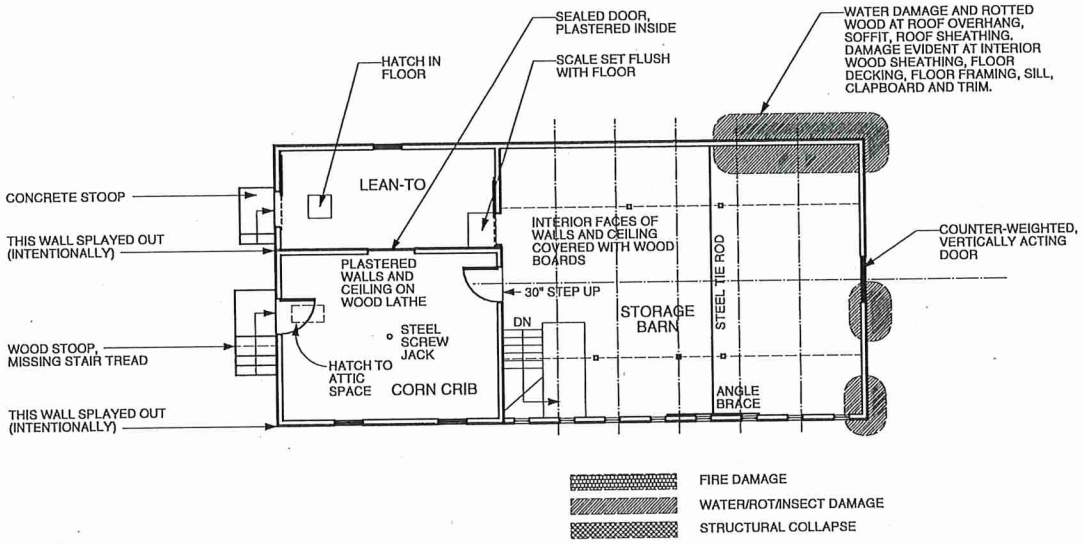
Existing Conditions Report
Workshop Complex and Seedhouse Structures
BEAVER BROOK FARM
Dracut, Massachusetts

Title:
SEEDHOUSE - CORN CRIB
LOWER FLOOR PLAN

N PROJECT NORTH

0 10 20 FT

Date: 17-Sep-21
Scale: 1/4"=1'-0"
Drawn By: PHILO
Sheet No.:
A-3



1 UPPER FLOOR PLAN
Scale: 1/8" = 1'-0"

JOHNSON ROBERTS ASSOCIATES INC.
ARCHITECTS
15 PROPERZI WAY
SOMERVILLE, MA
02143-3228

Existing Conditions Report
Workshop Complex and Seedhouse Structures
BEAVER BROOK FARM
Dracut, Massachusetts

Title:
SEEDHOUSE - CORN CRIB
UPPER FLOOR PLAN

N PROJECT NORTH

0 10 20 FT

Date: 17-Sep-21
Scale: 1/4"=1'-0"
Drawn By: PHILO
Sheet No.:
A-4

APPENDIX A

MASSACHUSETTS HISTORICAL COMMISSION
220 MORRISSEY BOULEVARD
BOSTON, MASS. 02125
617-727-8470, FAX: 617-727-5128

PROJECT NOTIFICATION FORM

Project Name: _____

Location / Address: _____

City / Town: _____

Project Proponent

Name: _____

Address: _____

City/Town/Zip/Telephone: _____

Agency license or funding for the project (list all licenses, permits, approvals, grants or other entitlements being sought from state and federal agencies).

Agency Name	Type of License or funding (specify)

Project Description (narrative):

Does the project include demolition? If so, specify nature of demolition and describe the building(s) which are proposed for demolition.

Does the project include rehabilitation of any existing buildings? If so, specify nature of rehabilitation and describe the building(s) which are proposed for rehabilitation.

Does the project include new construction? If so, describe (attach plans and elevations if necessary).

APPENDIX A (continued)

To the best of your knowledge, are any historic or archaeological properties known to exist within the project's area of potential impact? If so, specify.

What is the total acreage of the project area?

Woodland	_____ acres	Productive Resources:	
Wetland	_____ acres	Agriculture	_____ acres
Floodplain	_____ acres	Forestry	_____ acres
Open space	_____ acres	Mining/Extraction	_____ acres
Developed	_____ acres	Total Project Acreage	_____ acres

What is the acreage of the proposed new construction? _____ acres

What is the present land use of the project area?

Please attach a copy of the section of the USGS quadrangle map which clearly marks the project location.

This Project Notification Form has been submitted to the MHC in compliance with 950 CMR 71.00.

Signature of Person submitting this form: _____ Date: _____

Name: _____

Address: _____

City/Town/Zip: _____

Telephone: _____

REGULATORY AUTHORITY

950 CMR 71.00: M.G.L. c. 9, §§ 26-27C as amended by St. 1988, c. 254.

Beaver Brook Farm Committee
March 10, 2016

Present for the Committee: Chairman Ellis Neofotistos, Dave Paquin, May Paquette, Warren Shaw, Don Plummer and Debra Dewitt Ahern. Also present was Elizabeth Ware, Director of Community Development and Recording Secretary Samantha Carver. The meeting was held at the Town Hall in the 2nd floor conference room.

Absent: Andy Graham

Also present: Brian Pfeiffer
Helen Dunlap, Community Preservation Commission

The Chairman opened the meeting at 6:03 p.m. Mr. Brian Pfeiffer was present to go over his conditions assessment of the buildings at 761 Mammoth Road, Beaver Brook Farm.

Mr. Pfeiffer stated that he would be going through the report as printed out for the committee members.

He began with the main house and described it as built in many pieces and it looks as though the back piece may have been pushed together with the front house. The house is basically not in bad shape but could use gutters to keep the water away from it. The house is heavily framed and it includes mantel pieces from the 1800s.

Corn Crib
This building looks to be built sometime between 1790 and 1820 and it's been converted into a workshop, there is a water issue here, most of the buildings are threatened by water, this building has active leaks down to the cellar.

Squash Barn
There are vines on this building these are harmful to it and it was suggested they be taken off – but not pulled, cut them. There is a water trench forming from the rain water coming off the roof due to lack of gutters. Mr. Pfeiffer talked about if there is metal within the concrete this could erode the concrete. The building is approximately 90 years old.

Garage
The garage as built is very narrow. There was discussion as to what type of vehicle could fit into it at the time, there seems to be an insect infestation at this structure, this building has limited future use. There was a discussion as to whether this building served as an in ground silo or bunker silo. Bunker silos came about because upright silos were harder to maintain.

Workshop Complex
Mr. Pfeiffer mentioned the rubble stone foundation on this building, this building sustained two fires one in 1942 and one in 1972. There is hardly any roof left on this lightly framed building of corrugated iron and the building is cobbled together.

Dairy/Milk Building
This building has terra cotta block with stones filling voids, it contains corrugated asbestos, it has trees growing through roof of corrugated cement asbestos. Mr. Pfeiffer mentioned the building has many issues.

Recommendation
Mr. Pfeiffer is suggesting that getting the water away from the buildings is a first priority and that the Committee may want to consider demo of the buildings that have no use and there is no money to repair. As an immediate fix the house should have gutters put on it to try and keep the water from further damaging it.

Mr. Pfeiffer also mentioned that the Committee could do a comparative assessment of other buildings in Town and if there are other similar buildings in town in better shape that could help the Town's decision on demolition of some of these buildings. In discussions no other farm in Dracut has this type of squash barn.

Mr. Pfeiffer stated the squash barn, the seed/corn crib and the house are all worth preserving.

The Committee discussed with Mr. Pfeiffer how other towns have handled buildings like these and he talked about endowments and preservation convenants. There was a discussion on long term leases and how there is not enough oversight that improvements are being made in lieu of lease payments etcetera.

Mr. Pfeiffer talked about the Town considering a concrete specialists to assess the condition of the concrete at some of the buildings. He stated that structural engineers have a tendency to overdo their assessments. Mr. Pfeiffer discussed rolled asphalt roofing and how that is a cheaper alternative to buy a roof some time.

The Committee briefly touched on the condition of the silo and it was noted that it has fractured terra cotta. Discussion continued with Mr. Neofotistos mentioning the water tower that says 'Beaver Brook Farm' and possibly investing in the resurrection of that.

There was a discussion on the greenhouse material of cypress and whether that had any value to it. Mr. Pfeiffer talked about the Town consulting with someone who specialized in architectural salvage to see if these materials would be wanted.

Minutes

Mr. Paquin made a motion to approve the minutes of February 25, 2016 as presented. Mr. Shaw seconded the motion. The motion carried unanimously.

Adjourn

Mr. Shaw made a motion to adjourn the meeting at 7:52 p.m. Mrs. Dewitt Ahern seconded the motion. The motion carried unanimously.

BEAVER BROOK FARM COMMITTEE

Absent: Andrew Graham