Assessment by Architect Tom Keefe

This is a preliminary diagnostic report on conditions available to visual inspection at the time of our site visit; it is not a specification, and should not be used as a basis for contractor bids. Bid Documents contain substantially more information on quantities, standards, schedules, details and conditions of the work, which guide and protect both the Owner and the Contractor.

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October 19, 2017

As requested we visited North Clarendon Chapel on Oct.5, 2017 to examine and document existing conditions of the building, and to prepare this diagnostic report. Our findings are summarized below; conditions reported are those available to visual inspection at the time of our visit. Please note that while this report contains recommendations for repairs, it is not a specification for bidding; specifications contain substantially more information on quantity, quality and materials that both assist and protect you and potential bidders in carrying out repairs to your historic building.
The Chapel was listed on the State Register of Historic Places in 1980, and according to the SR Nomination was built in 1871. It is reported to have property boundaries at the line of the exterior walls, and therefore relations with neighbors will be a critically-important piece of on-going planning. Neighbors on both sides were helpful to me on the day of the assessment.

EXTERIOR

Steeple

A small 5' square wood-framed steeple rests on the peak of the roof at the east end, and has a rusty galvanized metal roof and ball finial; the metal appears sound but weathered, and has a ragged drip edge especially on the north side. The metal needs painting, and may have pin-hole deterioration that is characteristic of weathered galvanized roofing. This roof is a prime candidate for application of a liquid membrane consolidation such as Acrylabs (www.acrylabs.com Mitchell Weinberger Technical Representative Acrylic Roof Systems 37 County Road Lincoln, VT 05443 802-453-4648 phone 800-881-6195 phone 802-453-6438 fax); this product is designed to consolidate historic roofs, and will last longer and more effectively than just painting the rusty metal, which is the other option.

Below the metal roof a bracketed wood cornice encircles the eaves above round arched openings on all 4 sides; a low balustrade protects each opening, and the flared exterior of the

steeple base is covered in painted wood shingles that are substantially deteriorated. Most of the base flashing is concealed but where visible it appears rusty and should be replaced with a non-ferrous flashing. We could not observe the deck inside the railings, where a bell is apparently located; this is likely to be either flat seam soldered metal, or some form of membrane, and needs to be checked – with access via a lift or long ladder on the exterior as there is no connection from the attic – to determine any repairs needed.

Roof

The main roof is covered in purple slate nailed to the horizontal board roof deck, with a galvanized metal ridge cap; the small section of ridge cap east of the steeple is missing. A number of slates are hung on repair hooks. Approximately 12 slates on the south and six on the north are damaged, slipped or missing and need replacement; this is a yearly maintenance issue for slate roofs of this age. This roof appears to have been well-maintained, with relatively little current repair needed.

The shed roof on the west addition is covered with asphaltic roll roofing lapped up onto the west gable of the original building; this material has failed and is leaking, and needs to be stabilized (blue tarp) immediately, and re-roofed as soon as possible. Framing has been affected and will need reinforcing or partial replacement, and should be treated with a fungicide preservative; it is exposed on the interior, where white dry-rot fungus is visible. New roofing should be properly flashed to the vertical west gable wall of the original building.

Access to work on any exterior items above the eaves of the main roof will be a significant part of the cost, and such work should be grouped where possible to take advantage of the expensive access (lift truck; staging; etc.). Use of the highest quality materials with the lowest maintenance requirements is an economical plan for these locations.

Chimney

A 14 x 20 brick chimney centered on the ridge near the west end has a mortar wash and concealed base flashing; it is somewhat rough looking but appears sound. It should be checked to confirm the presence of a clay flue liner before use, and the base flashing should also be inspected up close to determine if any additional work is needed. A rain cap is always a good idea, to exclude rain and snow from the interior of the chimney.

Woodwork

The Chapel has a very plain crown cornice and pitched board soffit, with a flat frieze, a simple peaked door head casing, and back-banding at the arches on the main windows. The Chapel has 5” flat cornerboards, 4” window casings, 2” window sills and clapboard siding spaced at 3” to the weather, all painted.

We noted probable water damage to the steeple railings, to the shingle siding on the lower part of the steeple, at the center of the south cornice (may be paint only?), to the siding and trim in a number of locations, and at the bottom 4 courses of siding on the north. There may be some framing deterioration behind this lower north wall; a PVC water table here might reduce deterioration and consequent maintenance. Rusty fasteners are showing through the paint in many locations at trim and siding. Some repairs will be suitable for epoxy (West System or Abatron are both good-quality options) and some may involve selective replacement in kind with new wood. There are likely to be additional discovered repairs not cited here.

Doors and Windows

On the south, a 6/6 wood double-hung window with no storm needs sash conservation; (3) 9/11 Queen Anne wood double-hung windows with colored glass have no storms and need sash conservation.

On the east, (2) 9/11 Queen Anne wood double-hung windows with colored glass have no storms and need sash conservation. A 4-panel wood door needs maintenance repairs.

On the north, (3) 9/11 Queen Anne wood double-hung windows with colored glass have no storms and need sash conservation. A 6/6 wood double-hung window with no storm needs major sash conservation, and a plank wood door needs maintenance repairs.

There are no windows or doors on the west.

Sash conservation typically consists of removal of sash to a shop for complete disassembly and repair/re-glazing/re-painting, and prep/re-painting of the sill, jambs and casings before the sash is re-installed. It also includes provision of a secure security panel in the opening while the window is being repaired. Maintenance repairs can typically be done in place and involve less-extensive repairs to glazing, woodwork and finishes.

Paint

All exterior wooden surfaces are painted white; the paint is very thin, suggesting infrequent re-painting, and has worn off broad areas of siding on the south and east. Paint is alligatoring and flaking in many places, particularly around window and door trim and on siding on the north and west. The building needs a major (once-every-fifty-years) prep to remove old paint and thorough re-caulking, priming and painting. This is skilled work, not something that is apt to be well done by volunteers. In the event that full re-painting must be deferred pending planning/fund-raising, a paint stabilization phase should be considered; this would consist of a small amount of prep

(basic wire-brushing to remove loose paint) and application of a latex primer on all bare wood, to hold it for a year or two until full painting can be done.

Paint maintenance, often deferred on historic buildings, is an important first line of defense against incessant weather and climate-related deterioration; staying ahead of paint repairs not only protects the historic fabric of the building, but is almost always less expensive than waiting until deterioration to the painted substrates requires more invasive repair work.

Getting painters who are capable of the kind of careful and thorough preparation necessary to ensure good paint performance is difficult; *Preservation Brief #10: Exterior Paint Problems on Historic Woodwork* should be used as a guideline, and painters pre-qualified by their familiarity with these guidelines and a willingness to follow them.

Paint failure, especially with newer paints lacking the VOCs that older paints had, is a common problem, underscoring the need for careful preparation and use of the best possible materials, including caulks, primers and finish coats. The stages, causes and responses to paint failure are well-described in *Preservation Brief #10: Exterior Paint Problems on Historic Woodwork*, which should be used as a guideline in addressing paint repairs.

Prep work is 90% of the success of a paint job, and is skilled work that should not be left to amateurs. Although good-quality paint may appear expensive, most of the cost of painting is in labor, so that extending the cycle quickly becomes a substantial net gain. New lead-paint regulations will need to be followed; they should not increase the cost significantly.

Foundation

The building sits on a concrete foundation consisting of (4) pyramidal piers spaced evenly along each side of the original building, with three additional piers along the back (west) wall of the shed addition. Concrete in-fill between piers occurs on the south but not the north side of the original building; wood infill is used on the south side of the addition. While somewhat rough, the foundation appears sound and not frost-heaved, suggesting that the piers extend below the frost line. Some form of enclosure should be considered to keep critters out from under the building, and also to improve comfort and energy performance if the building is heated.

Site

Other than the 24' x 24' flat lawn between the building and the Town highway on the east, the building is reported by the Owners to sit right on its property lines, with no land on either side or behind; to the south the neighbor's landscaping comes right to the building, and on the north and west the neighbor's lawn runs up to the building. The north neighbor, James Theodore (802/775-7368) introduced himself during my assessment visit, and explained that he has a sewer line from the adjacent building that angles SW from the corner of his building across the lawn behind the Chapel. He expressed concern that cars or any heavy equipment not operate on top of this sensitive infrastructure, but also expressed willingness to work with the Chapel owners to allow them needed space to place ladders or otherwise maintain their building. He reported that his previous overtures to the Chapel owners had been rebuffed. Cooperation with neighbors is critical to the survival of this building, and it is highly recommended that this channel of communication be re-opened and nurtured.

The stacked marble front step needs to be re-pitched away from the building. Planting crowding the building at the SE and SW corners needs cutting back or re-locating to allow ~ 3' of clear space. With no basement, drainage is less critical; the lands slopes very slightly to the west. A pitched crushed-stone 'splash' centered under all eaves drip lines would help control erosion

and splash damage; a *de facto* scour line has been created on the south as water falling from the roof has washed away soil and fines. Work on either side will need to be carefully coordinated with the neighbors.

INTERIOR

Interior repairs are generally of a lower priority than exterior ones, since they have less impact on the building's condition and are not as vulnerable to weather-related accelerated deterioration. We note conditions here for the record, and urge the owners to prepare a comprehensive preservation and maintenance plan that will address ongoing cyclical maintenance of all interior and exterior elements.

The small vestibule has worn carpet, and plaster on walls and ceiling needs repair. On the interior 4-panel wood doors are typical and need maintenance repairs.

The S. closet has fiberboard on the floor, much compromised by a burrowing animal (woodchuck?), and plywood paneling on the walls and ceiling with plaster behind. All finishes are water-damaged, in rough condition and in need of extensive repairs. The N. closet has worn carpet on the floor, plywood paneling over damaged plaster on the walls, a 4-panel door, and acoustic tile on the ceiling.

The Sanctuary, with 10 ½' ceiling, has worn carpet on the floor, plaster walls with a deteriorated plywood wainscot, and a pressed-tin cove and ceiling that is extensively rusted but largely intact. This could likely be consolidated with a material like Acrylabs liquid membrane; if fiberglass insulation in the attic is replaced, it might be possible to paint the back side of the tin as well, which is where much of the rust is occurring.

The west shed addition comprises one large room with tongue & groove wood flooring, partial plaster that is in poor condition and no finish on about half the room. There is partial homasote

sheathing on the ceiling that is water-damaged and in poor condition. Portions of the exposed ceiling framing (modified site-built trusses using small-size dimensional lumber) are wet and show white mold; reinforcement or even partial replacement will be necessary, as has already been started on the back wall. An old sheet-metal hot air furnace is located here, but does not appear inspected or operational.

A makeshift 2x4 vertical ladder in the S. closet leads up to the attic, which is unfinished, with no lighting. Rafters are 2x6 @ 16" o.c. with a 10 in 12 pitch, and opposing pairs are reinforced with collar ties; the gables are framed with 2x4 @ 16". The floor/Sanctuary ceiling is framed with 2x8 @ 16" spanning across the 24' wide building, and there is a 6" layer of fiberglass insulation. The span is too long for joists of this size, although we did not see signs of deflection, or note unusual 'bounce' when walking on the joists. Fiberglass insulation has proved to be far less effective than cellulose; if this insulation were removed, it may be possible to access the back side of the pressed tin ceiling below in order to apply some rust-inhibitive paint, before insulating with cellulose. An engineer should evaluate the potential additional load on the under-sized joists.

The extent and nature – and therefore cost – of interior renovations depends on planning that has not occurred yet, and therefore we will not attempt to guess what decisions will be made; for planning purposes we recommend you carry as a place-holder roughly $50-75/square foot to cover demolition, and very basic repairs, finishes, electric, heating, insulation and hardware.

PRESERVATION STRATEGIES AND COSTS

Repairs are ranked below in order of priority. It is also strongly recommended that you carry at least a 20% contingency for conditions that cannot be seen in a non-destructive investigation such as this one. Use of contractors skilled and experienced in preservation work will help to manage discovered conditions and insure that proper consideration is given to materials,

practices and preservation concerns; this is usually the most cost-effective approach and protects the integrity of the building, including its eligibility for funding. Stabilization measures will likely be identified in the next phase of planning, to curtail on-going deterioration while fundraising and planning are carried out. Suggested phasing is discussed below, following the order-or-magnitude opinion of probable cost.

This opinion of probable cost addresses historic preservation issues; it is not based on full research, specifications or details, and should be considered advisory only. Our estimates are explicitly "Order of Magnitude" preliminary opinions of probable cost, exclusive of any Div.1 (General Conditions) costs, any specific costs associated with choice of materials and methods, any scale of work issues (small projects are more expensive per unit than larger ones), any project-specific conditions, any discovered conditions or additional information that a bidding contractor may well uncover, and that a specification can address but this brief report does not.

Costs are based on hired labor and new materials, both at market rates in a growing economy, taking into account special contractor expertise as required.

High Priority

Repair framing/re-roof shed addition	Allow	$3,000.
Provide missing ridge flashing; repair slates (main roof)	"	1,300.
Repair siding/flashing @ bottom stage of steeple	"	1,500.
Sash conservation – (10) windows, (2) doors	"	15,000.
Subtotal:		20,800.

Medium Priority

Woodworking repairs	Allow	2,000.

Full exterior prep/paint	"	14,000.
Subtotal:		16,000.
Low Priority		
Consolidate steeple metal roofing	Allow	2,000.
Re-set front steps with positive drainage	"	900.
Provide crushed stone 'splash' on N under eaves	"	800.
Subtotal:		3,700.
Total:		**$40,500.**

Phased Repairs

Often a small non-profit will need to use a phased approach to repairs, to allow sufficient time for planning, fund-raising and oversight. In this event, an important first step is to halt the progress of deterioration, taking quick, inexpensive temporary measures that will not be part of the finished repair, but will stabilize the building in its present condition, reduce immediate hazards, and buy some time. Aesthetics are not a concern, nor is permanence beyond a limited period (typically 6 mo. – 2 years); keeping water and critters out of the building, and securing it against wind, weather and vandalism are the main goals of stabilization. Care should be exercised to avoid damaging historic material or creating conditions that allow condensation, mold growth or other unintended effects to occur.

For this building, stabilization will begin with stopping any roof leaks – particularly on the west shed addition. A tarp can be secured over this roof to provide temporary water-proofing; it needs to be secured tightly, and probably will need a little ballast (several 2x 8s for example) to discourage wind displacement. The main roof is generally sound, and does not need a tarp; some temporary flashing at visible holes around the steeple base (seen from the attic) might be

advisable. Many windows are broken, allowing birds and insects to enter; these should be secured with either inexpensive oriented strand board ("O.S.B.") or clear Plexiglas – the latter is preferable on at least some openings to allow natural light into the building so that electric light won't be required. Stabilization painting could also be done at this time, to protect any bare wood. These steps will address most if not all water infiltration issues without sealing up any potential moisture. Costs for stabilization should be modest, on the order of $1-2,000, and can employ volunteer efforts.

Concurrent with this, it is critical to reach out to the neighbors and to begin developing a strong working relationship with them; without this it will be exponentially harder and maybe impossible to save this building. Some research needs to be done to establish as far as possible the legal boundaries and deed description; these are useful facts to have going into any discussion with adjacent property owners, who will have standing at any permit hearings, and will be understandably curious about future plans for the building.

Assuming that the building is stabilized, good relationships are developed with neighbors, and that there is at least a core group committed to the preservation and re-use of the building, the next two important steps will involve planning (decisions on what the mission of the organization will be, what the building will be used for, how this will be administrated, and eventually plans and permitting for work needed) and fund-raising, including grants, direct appeals to stakeholders, benefits, etc. The Preservation Trust of VT will be an on-going valuable resource for all of these activities; they can link you with others who have successfully negotiated this process, and point you to countless sources of information, advice and funding. Raising ~$40,000 for the repairs indicated above is a reasonable scale of project for Vermont based on past experience; it is important to realize that additional funding will also be needed to maintain the building once it is repaired, and hopefully most of this can come from revenue generated by

activities there. If the planned uses serve the community, and provide services and experiences valued by the stakeholders and the general public, the future of this historic resource will be much more secure. If the building and organization cannot fulfill such a need, it may not be possible to save it on this site, or possibly at all. Planning efforts need to include a long, hard look at this reality, and develop a credible strategy for implementing a self-sustaining process.

CONCLUSION

The immediate need is for stabilization, to halt on-going deterioration, and planning to establish the purpose and function of the building in the future. Repairs in the near future will return a number of deferred maintenance details to a condition requiring only routine maintenance; conversely, these problems will accelerate if not addressed. Employment of tradesmen with demonstrated expertise in historic building repairs - even though they appear more expensive than others - will avoid most maintenance problems created by unskilled repairs. Some repairs benefit greatly from using specifications for bidding (e.g. masonry; window restoration; painting) to guide the contractor and ensure that unqualified contractors are not selected based solely on a lower price; there is nothing more expensive than poorly-done work that has to be re-done.

A comprehensive plan for the use and periodic maintenance of the building should be developed to organize records, avoid costly repairs, anticipate cyclical replacement of materials, and utilize the best methods and materials from a growing body of research and experience with historic building maintenance, which often differs significantly from maintenance of newer buildings.

We are pleased to have had this opportunity to assist you in the on-going stewardship of this significant historic resource. Please don't hesitate to call if you have questions on any of the above, or need additional information or assistance in continuing restoration work on the building.

Sincerely,

Thomas F. Keefe, Architect
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