November 14, 2008

Att: Building Committee
South Congregational Church of Newport
Newport, NH 03773

Dear committee members,

I am pleased to have had several chances to meet with you to learn of your goals and concerns for the conditions of your historic church and the ongoing management of your property. The combination of our discussion, the package of material received from you and my field notes and photographs have provided me with the basis for the following observations and recommendations that will constitute the first part of my report. The purpose of this section is to provide background for a building management and cost estimating matrix. This is intended to be a management tool for your on-going stewardship of your fine building. The final section of photographs is to give a visual basis for the areas of study in the report.

Building History

The South Congregational Church of Newport is a lineal descendent of the series of community meeting houses and churches known as the Templeton Run. These related architectural designs of the eighteenth century originated in central Massachusetts and spread up the Connecticut River valley from Templeton (Mass.), to Troy, Fitzwilliam, Hancock and Acworth. Your own James Perkins has become New Hampshire's resident expert on the heritage of this structure and its fore-bearers, so I will not dwell on that history except to say that the architectural quality of the exterior of the church is of the highest order, reflecting the strong New England building traditions whose inspiration came north from Massachusetts through the work of Charles Bulfinch and the copy books of Asher Benjamin. (See NHsteeples.org/Newport for more information.)

The building was built in three stages. The first period, the sanctuary built in 1822, is a brick two-story hall with five bays articulated with recessed brick arches. The façade has a projected three bay entablature and engaged four stage bell tower. The eave wood working detail is fine including an ornamental cornice, guttae and crown moldings. The bell tower has two square stages with highly detailed trim including applied scroll brackets, applied pilasters and balustrades with turned balusters and urn-topped corner posts. The top two stages are octagonal with applied corner pilasters and painted simulated openings both arched and oval. A copper clad spire tops the upper copper clad roof.

The parish hall addition of 1872 successfully copies the detailing of the original construction with arched window bays and matching brick work. The eave detailing is also a close copy of the original. In 1923 the parish hall was reconfigured with a kitchen ell added.

The latest exterior addition built in 1987 is of quality brick construction but has little architectural detail tying it to the two earlier periods of construction.

Preservation of the church's primary exterior architectural features is critical to its maintaining such a well-defined architectural presence. Also critical is the protection of the building against water damage from ground level flooding and roof sources of water.

Owner's Goals

The members at our walk-through expressed a strong commitment to ongoing stewardship and management of this important historic resource. Questions were raised concerning exterior building maintenance, water damage, and general building condition. The following will be a narrative commentary on the found conditions of the building as well as the creation of a management plan for your use in the planning for routine building maintenance. Preservation Briefs related to the materials of the structure are included for guidance with the Secretary of the Interior's Standards and Guidelines for Historic Preservation. The following narrative addresses each element of the building's structure with observations of the as-found conditions and recommendations related to these.

The Site

Observed after snowmelt, the surface water around the church drains away from the building on most sides. The walkway connecting the east parking lot pitches toward the door to a stairwell, and has been observed to be a cause for occasional flooding in this stairwell.

The granite drip edge at the north façade of the church has been eroded from roof water and the action of frost on these granite slabs.

The drip edge at the south façade has a crushed stone drip edge with a grass strip between the drip edge and the road. Roof water has eroded this edge and the adjacent grass strip.

The rear entrance (west side) to the parish hall is no longer in use, and no walk services this door.

Recommendations:

Water run-off management is a small ongoing issue for this site. The east entrance water may be intercepted with a simple re-grading of the last six feet of the walk with a drainage grate installed to divert water to the side.

The granite drip edge may be causing water to penetrate the foundation. To fix this and improve the appearance along the north façade, we recommend removal and re-setting of these stones over a four inch crushed stone base with a continuous surface drain at the outside edge of the stone drip edge. Application of a butyl caulk at the butt joints of the granite drip edge is recommended.

The drip edge at the south façade may be improved with the addition of a drain pipe at the junction of the stone and grass. Installation of a

landscape edge (Ryerson or similar) will protect the grass from water damage and maintain a crisp edge.

The maintenance of the rear entrance to the parish hall may be required by egress codes but its lack of use has created an appearance of abandonment in this protected corner of the site. Consideration may be given to creation of a "go to" place for use by children and families in the summer. Use of this side of the site by the community will give incentive to the maintenance of the lawn, steps and building exterior.

Foundation

The exterior cut-granite foundation has high-quality mortar-laid granite slabs in both the original church and the later additions. It was not observed or reported that water penetration through this foundation adjacent to the stone drip edges has been a problem.

Recommendations:

Re-pointing will be required to maintain the integrity of these joints with both the brickwork and the granite drip edge. See references for mortar matching under brickwork.

Brickwork

Brickwork at each phase of construction is of high-quality, hard-fired water-struck brick. The condition of this brick is excellent in almost all areas. Some damaged brick can be seen where weather has scoured mortar back into the joints. There are also several broken bricks at shear crack lines seen over brick arch openings.

Black stains from weathering show on most of the lower brick walls below copper valley drip-edges.

Recommendations:

A systematic re-pointing program should be undertaken to prevent further mortar decay in the several areas affected. (See Preservation Brief #1, # 2 and #39 attached) Work with a qualified mason familiar with lime mortar re-pointing. Mortar sampling and test patches should precede any re-pointing project.

Brick cleaning will only temporarily remove the copper oxide stains on the brick below the copper valley drip edges. Brick cleaning should begin with the least abrasive method—the use of mild soap and water, and proceed through ever more aggressive chemical cleaning solutions. Avoid muriatic acid if possible.

Addition of a copper gutter and leader from the valley will remove the source of water bounce back against the brick and granite from these valleys.

Structural Frame

With good access, I was able to observe the original attic and bell tower. These were well constructed in the best manner of the period and have

been protected by the consistent maintenance of the roofing. The roof trusses appear in excellent condition. There are several connections that show spreading due to commonly seen, damaged mortise and tenon joints. A redesign of the worship space in the early 1920's introduced new bearing columns where they originally did not exist. While this could be presumed to transfer significant truss loading to the new column lines and thus reducing the effective span, no structural connection between these new columns and the trusses could be seen from above. The combination of the new structural elements and the relatively undamaged condition of the primary truss members should allay any concerns that would normally arise with a one hundred and seventy year old structure.

The structural connection between the wood lathe and plaster ceiling and the ceiling joists is an area where concern for the integrity of this original ceiling might be investigated. The superimposition of the new balcony plan in the early twentieth century has created a new ceiling structure below the original (see photo from 1900). This structure obscures any observation of the plaster lathe to frame conditions. Observable damage to the ceiling plaster can be seen in water staining on the plaster over the organ. This could have been caused by water penetration from the cupola. It seems that maintenance on the cupola roof decks has fixed this problem (see interior finishes).

Plaster cracking has also occurred on ceilings under the balcony. These areas are limited and to be expected in a building of this age. There is no evidence of an ongoing structural problem causing increases in this condition.

Recommendations:

I recommend the addition of steel plate gussets connecting the king posts and side posts of the truss to the bottom chord. No jacking should be undertaken to reseat these connections, as this will cause damage to later applications of substructure and plasterwork below.

Plaster damage is not an indication of failed structure in my observations but may be related to occasional ice-dams. Wood framing expansion, contraction and minor settlement can also cause minor plaster cracking. Those instances of plaster cracking should be addressed in periodic interior refinishing (see interior finishes).

An on-going roofing and flashing maintenance program and periodic inspections of both roof and cupola will prevent future water damage to the plaster. (See roofing)

Exterior Trim

Observations of the exterior running and standing trim were made from the ground and only reflect a limited visual proximity to the wood details. Periodic repainting appears to have kept the exterior trim in excellent condition.

Windowsills and casings are one element of exterior trim that are damaged and show significant peeling.

Need for incidental repair and replacement of architectural trim was seen in limited locations. Several guttae are missing from below the eave entablature. There are also rot-damaged sections of the balustrade, which was reconstructed in the 1990s. These can be observed from within the bell tower through the bird-proof hardware cloth.

Recommendations:

The generally good condition of the exterior trim is a testament to the maintenance program of the church. Periodic repainting should be assumed as part of the church's maintenance program.

Sill maintenance is the most difficult of the elements of the exterior woodworking. Re-painting of sills should include careful preparation of the wood including linseed oil-turpentine priming, oil based primer and latex based finish coat (see Preservation Briefs # 10 & # 28).

A more detailed inspection of the condition of the wood trim around the cupola is recommended to determine the extent of rot in this highly exposed location. Removal of a screen will be necessary to accomplish this.

The inspection of the upper two stages of the cupola can only be accomplished from a boom lift. We recommend periodic inspection of this highly detailed exterior trim as a part of the ongoing paint maintenance program.

Where trim elements require replacement, original material should be saved for use in matching trim size and profiles. Materials for replacement trim elements can include D-Select native white pine (shortest life expectancy in unprotected locations), pressure treated southern yellow pine, mahogany or Azek (a cellular PVC product which is white, works like wood and cannot rot). Installation of new trim elements should be done after they have been carefully milled to match existing trim and back primed all sides prior to installation.

WINDOWS

The original single glazed wood windows were observed to be in well-maintained condition. The installation of aluminum combination storm and screen windows has removed these windows from direct exposure to the weather.

Window casings are in good condition, with some minor paint failure.

Recommendations:

Most windows do not require repainting but should be inspected every four to six years. Some exterior casings currently require painting (see recommendations under exterior trim for paint and Preservation Brief # 9 attached).

ROOFING

I could make no detailed inspection of the roof shingles but the view from the bell tower shows the main church roof to be asphalt shingles of

sufficient age to have begun to curl. Church records will show the date of the last re-roofing. The office addition is also an asphalt shingle roof, which appears to be of a later date. The roof warranty for three-tab asphalt shingle will be fifteen to twenty five years.

The slate roofing on the parish hall wing is in good condition. Incidental broken slates can be seen. Maintenance records for this roof will show the frequency of repair of the slate roofing.

Recommendations:

It is imperative that, as new roofing projects are planned, the old roofing be removed first. This will lessen the dead loads on the structure as well as allow the examination of the condition of the roof sheathing. A re-roofing program should be put in place. We recommend scheduling of periodic replacement of roofing according to the roof warranty; e.g., 20-year. roof shingles to be replaced 20 years after installation. It is reasonable that the roofing work be done in sections as has been done in the past. Do not however wait until leaking triggers re-roofing. Structural damage can occur before water penetration is apparent on the interior.

A maintenance program for slate can be developed with an experienced slate roof contractor. It should be based on the condition of the slate as surveyed and implemented on an annual or biennial basis. Slate roofing replaced wood shingle roofing in the later part of the nineteenth century, as Vermont slate quarries could be accessed by rail. The slate found on the parish hall addition probably dates to its construction in the 1870's. The longevity of slate as roofing material makes it worth the ongoing maintenance of the slate. Re-roofing projects on sections of the roof which can be seen from below could be done with an architectural asphalt shingle selected in a color that is most similar to the adjacent slate. It could also be done using a cementitious slate or a rubber base simulated slate. These products are long-lived but more expensive that asphalt shingles. (See Preservation Brief # 4 attached)

Copper flashing has been installed in several important areas of the roof. A continuous copper belt course protects the lower three feet of the main church roof on both the north and south eave. This belt course appears to be in good condition and should not be removed at the time of the replacement of that roof. While small staining from drip-edge bounce-back can be seen on the lower section of the brick walls, gutters should not be installed along these eaves.

Soldered copper membranes have been installed very effectively in recent years at the belfry floor. These are well flashed to the structural posts. Maintenance should be anticipated twenty to twenty five years after records show that this work was installed or when periodic inspections show signs of a joint failure or leakage.

Copper valley flashing at the parish hall slate roof appears to be in good condition. It has contributed to black staining on the brick below this valley. Copper gutters and a single leader in this inside corner will prevent future staining.

Insulation

The brick construction of the sanctuary with plaster lathe on furring suggests that little side wall insulation exists in the original building.

It is also probable that both phases of additions, the 1870s and 1920s, do not have side-wall insulation.

Spray urethane insulation could be seen at the basement. This was installed during the expansion of the basement in the 1980's.

Fiberglass batt insulation averaging about six inches was observed over the entire sanctuary and parish hall attics.

Recommendations:

Insulation of the sidewalls of the each phase of construction can be considered. Examination by a skilled insulation contractor with access to several insulation products is recommended. The availability of space behind the plaster can be determined with minimal field-testing. Cellulose and Icynene are both products able to be blown into the cavities behind the plaster. Vapor barriers may be needed if these insulation materials are considered. The technology of these systems is rapidly changing and an architect or building scientist may be required to sort out these complex systems.

Insulation could also be enhanced at the cap. A cellulose cap with an R-value between R-38 and R-50 is recommended. Ventilation through the cupola and rear gable should be considered if significantly more insulation is added to the cap. An energy audit by an insulation contractor or mechanical engineer will predict pay back for any insulation level selected and may help with the decision making process for an insulation strategy.

Interior Finishes

Interior finishes are in relatively good condition. The 1920's wood doors, trim, baseboard, crown moldings and columns in the sanctuary are of high quality and have been carefully maintained. Plasterwork in the sanctuary shows several areas of failure. Shear cracks from differential settlement or minor framing movement can be seen below the balcony.

It is interesting to note the evolution of the sanctuary. It evolved from its simple cove ceiling (now only observable from the attic) to the polychrome and stenciled finishes of the 1880's (observable in a newspaper photo of 1900) to the Colonial Revival column supported balcony and pilaster architrave.

Interior finishes in the parish hall and office wing are in similar condition. Naturally finished interior trim and installation of several different paneling systems create an architectural feeling of real contrast with the neo-classical (1920's Colonial Revival) finishes in the sanctuary. This trim treatment, in combination with the completely inappropriate suspended ceiling in the hall, gives a sense of well-intended institutional vandalism. This clearly resulted from the

functional demands of maintenance and acoustics without the aesthetic sensibilities of the high quality of the original parish hall addition.

Recommendations:

Periodic repainting can address the small plaster repairs in the sanctuary. We recommend that a plasterer or plaster consultant be engaged if any plaster requires significant replacement upon closer examination. Repainting of plaster should include testing for calcimine paint base. Re-coating over a calcimine base is rarely successful. The early twentieth century re-design of the sanctuary may have been past the period of calcimine paint (See Preservation Brief # 28).

The finishes of the parish hall might be reconsidered in light of a program shift to accommodate winter services (See energy conservation). The reinterpretation of this space could allow the combination of energy retro fitting, a more consistent interior presentation and enhanced programming to make this space better serve the management and aesthetic demands of the church (see recommendations for west exit from the parish hall).

Consultation with an architect sensitive to the architecture of the phases of development of the church is recommended.

Electrical Systems

The electrical system has had numerous updates over time and no flagrant deficiencies were observed.

Recommendations:

The electrical system should be inspected by a licensed electrician or electrical engineer. This inspection should be programmed to sort out the many periods of electrical wiring in the building. Removal of non-functional wiring is a safety recommendation.

Mechanical Systems

Mechanical systems are from several periods of construction. They are reported to be functional.

Recommendations:

A mechanical contractor or engineer should be engaged to evaluate these systems. Consideration should be given to the use of programmable thermostats to manage space heating in response to the programmed use of the various spaces of the church.

Further consideration should be given to the mid-winter relocation of the worship service to an enhanced parish hall space. This can save considerable energy over the several months between Christmas and Easter when attendance can be historically low. Church records for attendance during this period can help in the prediction of the need for use of the large sanctuary during the coldest part of the winter.

The maintenance of a well zoned heating system at significantly lower temperatures (not to below freezing) can save fuel without damaging interior finishes. A mechanical engineer or energy consultant can predict these savings using data from this report and the existing thermal characteristics of the structure.

Handicapped Access

Churches are exempt from the requirements of the ADA, but many churches voluntarily comply because of elderly populations and civic responsibility. Universal accessibility to all floors may not be necessary if other spaces are accessible serving the same functions.

The balcony is not accessible but since seating is available on the main level this should not be considered an issue. Wheel chair locations in the worship space exist though they are not specially marked.

The lower level religious education program is also not accessible. Provision for this may be met by installation of a LULA (Limited Use Limited Access) lift. This can be intrusive and expensive. A preferred solution would be the designation of religious education spaces on the main floor when the children of church members need access to the program. Public advertisement within the church community of this policy will satisfy most community members and allow programming to respond to need rather than a seldom used intrusive installation.

Egress Code

The church meets egress code requirements.

Management Plan

This report is intended to provide a guide for the ongoing management of this historic structure. The tools included scale plans and several different approaches to addressing budgets for specific elements of the building fabric.

These include roofing and flashing, brick and stone masonry, exterior and interior painting and windows. I have also included floor plans of the church as tool for the solicitation of bids for repair, replacement or maintenance of building fabric.

Additionally I have included excerpts from two property management guides for your use.

The excerpts from the New Jersey Property Management Guide of the Diocese of Newark (2007) include a chapter on Annual Maintenance which provides a clear over view, describes an annual maintenance walk-through and includes appendices for Vendor Lists, Annual Maintenance Check Lists and a very thorough discussion of handicapped accessibility. This selected excerpt is useful in delegating responsibility within the church for maintenance and the systematic record keeping related to Vendors and Checklists.

The excerpts from The New York Landmarks Conservancy: Managing Repairs and Restoration Projects--A Congregation's How-To Guide, (Shari P. Goldberg, 2002) include the following:

- Consultant selection guidelines, request for proposals guidelines
- Conditions Survey format
- Sample Bid Package
- Contractor Qualification's Statement
- Sample Contract
- Bid Evaluation Form
- Sample Maintenance Plan

These formats will be useful in the selection of professional consultants and the solicitation of bids for minor and major repair work.

Construction cost for most repairs may be obtained using the bidding methods described in the above excerpts in conjunction with the architectural plans that have been attached. A scale architectural plan in conjunction with a verbal description of the scope of the work as per the Sample Contract provides the scope and size of the work and will become the basis for competitive bidding. It is recommended that an architect knowledgeable in historic restoration be selected to write the specifications and administer the selection of a contractor whether by bidding or negotiated contract.

I have not included detailed construction cost estimates in this report because they too rapidly become out-dated and misleading. The determination of scope for any single repair or maintenance project will be required before a current budget can be established for the project. The methodology described in the excerpts above proscribes the series of steps necessary to establish current budgets for either repair or capital projects.

I will use roofing as an example of the cost projection for a maintenance budget. The two areas of asphalt shingle roof are over the fellowship wing and the administration wing. Using October, 2008 prices, the costs for complete shingle removal, new felt, new ice and water-shield and new 35 year asphalt shingle roofing, would be as follows:

Worship Space: 3800 s.f. @ $3.50-$4.00 /s.f. = $13,300- $15,200
Administration wing: 2100 s.f. @ $3.50-$4.00 /s.f. = $7,350- $8,400

My observations from the bell tower indicate that the worship space roof will soon be in failure (2-4 years). The administration wing roof replacement timing can be determined from your records indicating the year of installation. The best approach to budgeting for these periodic capital expenses is the establishment of an annual investment in a capital reserve fund for these expenses. If the worship space roof is replaced in four years at say $17,700 (roughly 4% inflation for four years), an annual investment of $3,900 (bearing interest @ 5%per year) for the next four years would fund this capital improvement in 2012. A similar projection anticipating the roof replacement in 2047 at $74,970 will require an annual budget commitment of $790 for that roof replacement. These calculations have all been done using an on-line compound interest calculator.

This methodology is sensible for asphalt shingle roofing, but less applicable for other materials. An important caveat—the weakness in this type of long range cost projection is the variability of rates of inflation, interest rates, and evolving construction technology, etc.

A slate roofing budget is less easy to predict. An annual commitment of say $1,000 to the roofing fund will produce $4,500 of capital for use in an inspection and incidental repair every four years. This budget can be adjusted as experience dictates.

A word about painting, the other inexorable exterior maintenance item. We recommend dividing the building into four roughly equal areas, say west facade and tower, south façade, east façade and north façade. Painting contractors can provide a contract for scraping, prepping, priming and finish coating of each of these facades. Plan to paint one façade every two years and evaluate the condition after this re-coating. It is anticipated that this maintenance will continue with new pricing every ten to twelve years. Similar approaches may be used for brick and stone re-pointing.

Many of these anticipated cost projections can be done by volunteers knowledgeable about the structure and with access to the church maintenance records. The determination of costs for more significant capital projects, like the bell tower repairs, interior planning changes, etc., should be done with the assistance of a restoration architect. Detailed written specifications for reconstruction or restoration of critical architectural elements are mandatory to achieve the desired results and establish budgets.

A management plan is built in increments. The most important directive of a management plan is that it be implemented and followed using the additive data that will come from the use of the systems that I have recommended above. A preliminary goal would be to plan for an annual budget allocation for roofing, painting, and miscellaneous exterior repairs. As several of the more specific areas of concern mentioned in this report are studied and estimated, the annual budget to include these should be increased. Capital projects should not come from your annual operating budget. A capital projects fund is the most common way to fund larger projects.

Your building is an important state asset and you are to be commended for your responsible stewardship to date. While no significant emergency repairs are noted in our report, it is important that planning for long term maintenance be in your budgets. My particular thanks to you, the committee, for your assistance in the building tour and articulation of the building history, community needs and building maintenance program.

I am pleased to provide any follow-up to the contents of this report as needed.

I remain yours
Sincerely,

Richard M. Monahon Jr.

A.I.A. Architects