An Evaluation of the Impacts of Replacement Reserve Studies on the Stewardship of Historic Houses of Worship

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An Evaluation of the Impacts of Replacement Reserve Studies on the Stewardship of Historic Houses of Worship

Abstract
Reserve studies are a facilities maintenance planning tool created by the common interest development industry in the United States that could be a useful tool for heritage site managers to financially plan for maintenance and repairs. Unexpected building related costs can be a threat to the financial stability of religious organizations and other types of nonprofits housed in historic buildings because these organizations require lead time to raise funds. Reserve studies could be a useful tool for site managers to financially prepare plan for repairs and generate realistic reserves to cover future expenditures. Reserve study reports include a physical assessment of an organization's facilities and a funding plan to provide income to a reserve fund to offset maintenance and repair expenditures for a minimum of twenty years. This thesis explores the potential for reserve studies to help religious organizations and other nonprofits housed in historic buildings accurately estimate and provide for facilities maintenance to become more financially sustainable organizations. Evidence for this thesis was sourced from interviews with five stewards of religious buildings of differing ages that are at various stages of implementing recommendations made by reserve studies. Comparing the experience of stewards of recently constructed buildings to historic buildings explores the effect of building age on the use of reserve studies.

Keywords
Reserve Study, Preventive Conservation, Heritage Site Management, Financial Planning, Facilities Maintenance

Disciplines
Historic Preservation and Conservation

Comments
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AN EVALUATION OF THE IMPACTS OF REPLACEMENT RESERVE STUDIES ON THE STEWARDSHIP OF HISTORIC HOUSES OF WORSHIP

Allison King

A THESIS

in

Historic Preservation

Presented to the Faculties of the University of Pennsylvania in Partial Fulfillment of the Requirements of the Degree of

MASTER OF SCIENCE IN HISTORIC PRESERVATION

2019

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1. INTRODUCTION

Preservation literature recommends that stewards use a heritage management plan to sustainably care for historic sites over a long period of time because such a plan identifies the values associated with a site and designs policies to protect its significance.\(^1\) Heritage is valued for a number of non-monetary reasons such as cultural, political, aesthetic, and community.\(^2\) The contents of a heritage management plan reflect the importance of nonmarket values in preservation by prioritizing the cultural significance and physical conservation over economic value. A heritage management plan includes a statement of purpose, historical description, assessment of significance, summary of current conditions, management issues, aims, and objectives, maintenance and repair recommendations, and a monitoring program.\(^3\) Cost estimates are not typically included in a heritage management plan because implementing the plan’s recommendations are the responsibility of the site’s steward.\(^4\) Not including costs with a heritage management plan may be problematic for site stewards who do not have the resources or knowledge to accurately budget for implementing preventive maintenance recommendations.

Unexpected building related costs can be a threat to the financial stability of religious organizations, nonprofits, and other types of public charities housed in historic

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buildings because these organizations require lead time to raise funds. Public charities must rely on donations from many different income sources for operating funds to keep their tax-free status. The fundraising process takes time, which an organization may not have if a building issue is pressing, such as a broken heater in the winter. When emergencies arise, organizations with little cash on hand may need to divert existing resources away from other spending priorities, such as mission-related activities, in order to continue occupying their facilities. A recent study found that a quarter of religious organizations in historic buildings allocate 40% or more of their annual operating budgets on property care, which can be difficult for mission-driven organizations to justify. Lack of adequate funds can cause organizations to temporarily put off maintenance and repairs. Deferring maintenance can exacerbate existing deterioration, raising the cost of repairs past what an organization can afford. This unfortunate cycle is a self-reinforcing feedback loop that can deplete resources until the only option is to relocate, leaving the building to the mercy of the local real estate market. Including costs with a heritage management plan could allow public charities and similar organizations time to build up financial resources to fund maintenance and repair projects in order to reduce the need to divert funds from other spending priorities.

Heritage management plans that include an indication of cost have proven to be successful for European governments to care for their heritage properties. Monumentenwacht (Monuments Watch), pioneered by the Netherlands in 1973, was the first national preservation program to integrate a conditions assessment, maintenance plan, and financial assistance. The program includes a tax deduction, subsidy for large monument repairs, loan program for small repairs, and a subscription service that allows owners to engage professionals at a low cost to assess the condition of their historic buildings and offer recommendations for repairs. Cost estimates are included with the conditions assessments to help owners apply for governmental financial assistance for repair work. After more than forty years, approximately 80% of public and private Dutch monuments are in good to reasonable states, fewer sites have been lost to fires, and less public money is needed for cultural heritage management. In 2014, Belgium, Germany, Denmark, Hungary and Norway implemented similar approaches under the Cultural Heritage Counts for Europe Initiative of the European Union. The European Union has recognized that investments to conserve cultural heritage benefit their tourism and construction industries. Tourism is the third largest socioeconomic activity in Europe, and repairs and maintenance on historic buildings consist of a quarter of Europe’s

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10Ibid. 18-19.
construction industry.\textsuperscript{12} Since the Cultural Heritage Counts for Europe Initiative, the European Council has funded several conservation focused grant programs, including €27 million in the Creative Europe program (2014-2020) and €100 million in the Horizons 2020 program.\textsuperscript{13} The European governmental grant programs for cultural heritage incentivize owners to plan for and estimate preservation work, which encourages more physically and financially sustainable heritage sites.

Reserve studies are a facilities maintenance planning tool created by the common interest development industry in the United States that could be a useful cost estimating tool for heritage site managers who must rely on their own resources. Common interest developments (CID’s) are a category of real estate that include condominiums, time shares, golf resorts, schools, and religious organizations.\textsuperscript{14} CID’s are classified as common property and facilities which are provided for by a system of self-governance managed through an association. Reserve studies were created to establish a minimum requirement for governing associations of common interest developments to prove that they had exercised their fiduciary duty or responsibility to their beneficiaries by maintaining common facilities.\textsuperscript{15} Reserve study reports include a physical assessment of an organization’s facilities and a funding plan to provide income to a reserve fund to

\textsuperscript{12} European Commission, “Communication from the Commission to the European Parliament, the Council, and the European Economic and Social Committee and the Committee of the Regions: Towards an Integrated Approach to Cultural Heritage for Europe” (Brussels, July 22, 2014).
offset maintenance and repair expenditures for a minimum of twenty years. Unlike heritage management plans, reserve studies produce long-term cost estimates which can give a governing organization a fundraising goal and time to raise the money. This thesis will explore the potential for reserve studies to help religious organizations and other nonprofits housed in historic buildings accurately estimate and provide for facilities maintenance to become more financially sustainable organizations.

Evidence for this thesis was sourced from interviews with five stewards of religious buildings of differing ages that are at various stages of implementing recommendations made by reserve studies. Comparing the experience of stewards of recently constructed buildings to historic buildings will explore the effect of building age on the use of reserve studies. The National Register considers a building to be considered historic if it is older than fifty years, recent if it is younger. Narrowing the scope of interviewees to stewards of religious buildings provides a natural intersection between common interest developments and historic site managers. The experience of stewards of recent religious buildings is described first to provide a model for the use of reserve studies that is similar to the function of a conventional CID reserve study. Once a baseline for the use of reserve studies by religious organizations is established, this work will delve into reserve study use by stewards of historic sites. Both types of experiences will be compared in the final chapter. The last chapter also includes recommendations for

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adapting reserve studies for other heritage site managers. The aim of this investigation is to understand how reserve studies can help heritage stewards provide for long-term, sustainable site management.
2. BACKGROUND

2.1 The Origins of Reserve Studies

Common interest developments (CID’s) form a broad category of real estate that includes condominiums, golf resorts, time share properties, schools, and religious organizations. Common interest developments (CID’s) as a type of property are classified by common assets and facilities which are provided for by a system of self-governance managed through an association. The origins of common interest developments lay with Ebenezer Howard’s influential book, *The Garden Cities of Tomorrow* (1898). Howard’s work applied utopian ideals to urban planning. It was his firm belief that the perfect society could be achieved by rational city planning and governance. The book became a popular manual for financing, building, and operating a “new town” or “planned community.” Howard formed the Garden City Association and lectured in both the United States and United Kingdom. Two cities were built in England using his model, Letchworth (1909) and Welwyn (1920).

The first development built in the United States inspired by Ebenezer Howard’s ideas was in Radburn, NJ in 1928. Clarence Stein and Henry Wright designed the buildings and Majorie Sewell Cautley created the landscape. The Radburn plan was innovative in design, traffic management, and landscaping but the most impactful legacy of the Radburn development was the restrictive covenant designed by the developer’s

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lawyer Charles Ascher.  

Restrictive covenants are legally binding agreements, enforced by the governing associations of CID’s, that restrict a homeowner’s potential uses of their property. They are written by a common interest developer and later amended and enforced by the governing association of a CID. Restrictive covenants are the legal relationships requiring mandatory membership dues of residents in commercial CIDs to support maintenance and repairs of common property.

Issues with the legalities of restrictive covenants were the responsibility of the judicial branch of government of the United States until comprehensive legislation was passed. The lack of legislation initially meant that the courts had to rely on case law to create policies for defining and adjudicating problems with CID’s. California was the first state to comprehensively regulate CID’s with the Davis-Stirling Act passed in 1985. The Davis-Stirling Act required governing boards of CID’s to prepare and distribute a pro forma budget that includes estimated revenue and expenses, identification of cash reserves, estimation of the remaining service life of components. The budget must also include the costs associated to maintain, repair, and replace items, as well as a statement to explain the methodology for determining the cost estimates. The pro forma budget mandated by the Davis-Stirling Act established a minimum requirement for governing associations to prove that they had exercised their fiduciary duty to their residents.

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22 Ibid. 10.
23 Ibid. 127.
beneficiaries to maintain common facilities.\textsuperscript{27} Creating fiduciary duty became very important to the governing associations of CID’s after the 1986 case, \textit{Francis T. v. Village Green Owners Association}. This case set a precedent for associations to be sued directly for negligence of fiduciary duty and breach of contract.\textsuperscript{28} Later legislative amendments to the California code in 1988 and 1992 gave association directors and board members protection against legal action if their duties were performed in good faith without gross negligence.\textsuperscript{29} Regularly published pro forma budgets were useful tools for associations to avoid legal action. Pro forma budgets for the governing association of CID’s were not standardized into a reserve study format until 1998, when the National Reserve Study Standards were first published by the Community Associations Institute.\textsuperscript{30} As of 2011, thirty states legally require CID’s to complete periodic pro forma reports; eight specifically require reserve study formats.\textsuperscript{31}

2.2 The Anatomy of a Reserve Study

Replacement reserve studies and their terminology are based off of the National Reserve Study Standards (Appendix C: National Reserve Study Standards).\textsuperscript{32} Reserve studies are compiled from two sources of data, a physical assessment and a financial

\textsuperscript{28} In \textit{Francis T. v. Village Green Owners Association}, a unit owner was raped and robbed. The victims were able to successfully sue the association board for negligence, breach of contract, and fiduciary duty for refusing to allow the unit owner to take preemptive safety measures by installing exterior lighting. (Evan McKenzie. \textit{Privatopia}, 161-162)
\textsuperscript{29} Ibid.
analysis of an organization.\textsuperscript{33} The physical assessment includes a component inventory, condition assessment, and life/valuation estimates.\textsuperscript{34} The financial analysis examines the monetary health of the organization to create a funding plan. Both the physical and financial assessments are used to create the funding plan for the organization. The National Reserve Study Standards define three levels of detail to reserve studies.\textsuperscript{35} A full reserve study includes a physical assessment and a financial analysis. An updated reserve study with on-site review includes a revised component inventory, a conditions assessment, service life estimates, a funding status, and a funding plan. An updated reserve study with an off-site review includes revised service life estimates, fund status, and a funding plan.

There are two common ways of creating a funding plan, the cash flow method and the component method. The cash flow method utilizes the reserve fund as an aggregate pool, set aside to cover all future estimated capital expenditures, maintenance, and a buffer fund.\textsuperscript{36} The cash flow method produces a closer relationship between funding and expenditures than the component model, but it is not without its faults. Financial projections can quickly become obsolete if not updated. This model works best with detailed and updated projections to reduce the risk associated with a smaller financial buffer.

\textsuperscript{33} Community Associations Institute, “National Reserve Study Standards,” 1998.
\textsuperscript{34} Community Associations Institute, “National Reserve Study Standards,” 1998.
\textsuperscript{35} Peter B. Miller, “Cutting Through the Fog: Cash Flow vs Component Understanding Different Methodologies.”5.
\textsuperscript{36} Peter B. Miller, “Cutting Through the Fog: Cash Flow vs Component Understanding Different Methodologies.”7-8.
### Cash Flow Method

<table>
<thead>
<tr>
<th>Component Funding Year</th>
<th>Cost</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
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<tr>
<td>1</td>
<td>$100</td>
<td>$25</td>
<td>$25</td>
<td>$25</td>
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<td>$100</td>
<td>$25</td>
<td>$25</td>
<td>$25</td>
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<td>$25</td>
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<tr>
<td>3</td>
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<td>$25</td>
<td>$25</td>
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<td>$100</td>
<td>$25</td>
<td>$25</td>
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<td>$25</td>
<td>$25</td>
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<tr>
<td><strong>Reserve</strong></td>
<td>$100</td>
<td>$25</td>
<td>$25</td>
<td>$25</td>
<td>$25</td>
<td>$25</td>
</tr>
<tr>
<td><strong>Annual Cost</strong></td>
<td>$125</td>
<td>$125</td>
<td>$125</td>
<td>$125</td>
<td>$125</td>
<td>$125</td>
</tr>
<tr>
<td><strong>Total Reserve Study Contributions</strong></td>
<td>$625</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>5 Year Expenditure Total</strong></td>
<td>$500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reserves</strong></td>
<td>$125</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1 The cash flow method of funding a reserve study uses an aggregated pool to cover annual expenses and reserve contributions. Rather than save for each component individually, the cash flow method most of the reserve contributions for annual expenses, leaving a buffer amount to cover emergencies.

### Component Method

<table>
<thead>
<tr>
<th>Component Funding Year</th>
<th>Cost</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$100</td>
<td>$100</td>
<td>$25</td>
<td>$25</td>
<td>$25</td>
<td>$25</td>
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<td>3</td>
<td>$100</td>
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<td>$33</td>
<td>$33</td>
<td>$25</td>
<td>$25</td>
</tr>
<tr>
<td>4</td>
<td>$100</td>
<td>$25</td>
<td>$133</td>
<td>$108</td>
<td>$100</td>
<td>$100</td>
</tr>
<tr>
<td><strong>Annual Cost</strong></td>
<td>$208</td>
<td>$133</td>
<td>$108</td>
<td>$100</td>
<td>$100</td>
<td>$100</td>
</tr>
<tr>
<td><strong>Total Reserve Study Contributions</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>5 Year Expenditure Total</strong></td>
<td>$500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reserves</strong></td>
<td>$150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2 The component method identifies each cost as a line item savings or expenditure so that when the repair is scheduled, the reserves are there to fund the work.

The component method calculates the total reserve required to maintain, repair, and eventually replace a component. These line item reserve contributions and costs are totaled for a fundraising goal based on the assets, income, and debts of the client organization. Component-based reports do not have to be updated as often as cash-flow reports because of the significant buffer included by saving for each component.
individually. The problem with the component method is the “catch up” period that is required to return reserves back to a sufficiently funded position. The recommended contribution for older components may require more money over a shorter period of time, which can be cost-prohibitive to an organization in a historic building with limited reserves and resources. Inadequate resources to fully fund component reserves have led to the proportional funding model. The proportional funding model is like the component method except the organization plans to fund a portion, rather than the whole, reserve balance. Proportional funding can help an organization catch up to their recommended reserve levels, but it can also lead to critical gaps in an association’s reserves, making the organization ill prepared when emergencies arise. The component method provides a reserve for each individual component, but this funding method can be difficult for organizations with many underfunded components that need to be addressed in the short term. Funding a portion rather than an entire reserve could help an organization’s reserves “catch up,” but it can also increase the financial risk in the case of an emergency.

2.3 Reserve Analyst Credentials

Architects, engineers, contractors, cost estimators, and certified reserve analysts are typically involved with generating reserve studies. The Community Associations Institute (CAI) and Association of Professional Replacement Reserve Analysts (APRRA) offer credentialing programs for professional reserve analysts. The Community Associations Institute was organized in 1973 through the joint efforts of the Urban Land

37 Peter B. Miller, “Cutting Through the Fog: Cash Flow vs Component Understanding Different Methodologies.”
38 Ibid. 10.
Institute, the National Association of Home Builders, the U.S. League of Savings and Loan Associations, the Veterans Administration, the U.S. Department of Housing and Urban Development, and other industry professional groups. The goal of this association was to bring together developers, property managers, homeowner association directors, professionals who cater to CID’s, and public officials to research CIDs. Their task was to advocate for policies that encourage best practice. The CAI was instrumental in writing and lobbying for policies such as the Davis-Stirling Act, which was the first legislation to regulate CIDs, passed in 1986 in California. The CAI also co-wrote the National Reserve Study Standards, which standardized the structure and language of government mandated pro forma reports. In the mid-1990’s, the number of professional members of the CAI skyrocketed, while participation from other stakeholders such as public officers significantly diminished. This membership shift at the CAI shifted the organization’s focus away from research and policy towards professional development.

The CAI offers a Reserve Specialist (RS) Designation which is earned by preparing thirty reserve studies within the past three years and submitting a list of previous clients. Candidates must have a bachelor’s degree in either construction management, architecture, or engineering, and pay the application fee. A professional with an RS designation must prepare at least thirty reserve studies every three full calendar years to continue this designation.

The Association of Professional Reserve Analysts was developed as a professional organization in the mid-1990’s. The APRA offers a Professional Reserve Analyst (PRA) credential to professionals from APRA affiliated companies. Candidates for a PRA credential must have five years of full-time experience completing reserve studies. To maintain a PRA credential, a professional must complete eight credits of continuing education annually.

Nevada is the only state that requires reserve studies to be completed by a licensed Reserve Analyst. The state’s Department of Business and Industry’s Real Estate Division mandates candidates have a good reputation for integrity, the ability to create a component list and evaluate the service life of components, perform a financial analysis, and have the background to address all areas of a reserve study. Candidates must also complete a background check. The State of Nevada is not specific about what types of backgrounds qualify a professional for a Reserve Analyst license.

The field of architectural conservation does not have a licensure or certification program. The topic of certification has been long debated amongst conservation practitioners. Some in the field feel that the conservation graduate programs offer a sufficient credential to the title of conservator. Others believe a license would improve the recognition and performance in the field. Members of the American Institute for Conservation voted against implementing a certification in 2009 (58% no to 41.4% yes,

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42 “Reserve Study Specialist Application.” State of Nevada Department of Business and Industry, Real Estate Division, (October 17, 2018) http://red.nv.gov/uploadedFiles/rednvgov/Content/Forms/644.pdf.  
with 73% of eligible voters voting).  

The Secretary of the Interior recommends that professionals working with historic architecture have a professional degree in architecture or state license to practice architecture. In addition, qualified professionals must have at least one year of preservation-related graduate coursework or one year of full-time professional experience on historic preservation projects.

2.4 Background Summary

A reserve study is a report that includes a physical assessment and a financial analysis. Reserve studies were created by the common interest development industry to care for shared assets. CID’s are characterized by a system of self-governance whose charter is to maintain communal facilities and enforce the rules of their restrictive covenants. The Davis-Stirling Act, passed in California in 1986, was the first comprehensive legislation of CID’s to require governing organizations of CID’s to produce a periodic pro forma report. These regular reports plan for the maintenance and repairs of common facilities and establish a baseline fiduciary responsibility of the governing CID associations to avoid legal action. In 1998, the Community Associations Institute published the National Reserve Study Standards to standardize the terminology and content of reserve studies. Two associations, the Community Associations Institute (CAI) and the Association of Professional Reserve Analysts (APRA), offer credentials

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44 AIC Board of Directors. “Certification Vote Results.” (American Institute for Conservation, March 2009)
48 California Association of Community Managers, Inc. and the California Department of Real Estate. Living in a California Common Interest Development.
for reserve analysts. Nevada is the only state to require a Reserve Specialist license.

Thirty states require associations to publish a regular pro forma report, and eight of those states require reserve study formats specifically. The proliferation of a standardized reserve study methodology and format across a wide range of building types and states suggests that reserve studies could be a useful management tool to be adapted by religious organizations and heritage managers
3. METHODOLOGY

3.1 Methodology Introduction

This research relies on evidence gathered through phone interviews conducted with five stewards of religious buildings from around the United States. While not conclusive, their experiences are valuable case studies that can be used to evaluate the potential benefits of reserve studies in the context of heritage management. This chapter will outline the reasons for selecting qualitative data collection, the importance of case study research, the formation of a grounded theory, and why these methods are the most appropriate to evaluate the use of reserve studies by religious heritage stewards.

3.2 Qualitative Data Collection

The reserve study industry advertises that reserve studies are useful for creating a funding plan, evaluating reserve fund strength, and generating a component list.49 These deliverables can be used as a financial barometer of an organization to steer external investment, capital project planning, and general maintenance.50 Some of the marketed effects of reserve studies are quantifiable, such as the ability to fund an adequate reserve for future work. Other advertised benefits are social impacts that can only be described qualitatively, such as changes to decision making or organizational structure. The purpose of this thesis is to understand the organizational benefits of a reserve study on stewardship of religious buildings with the intent of exploring their uses for heritage

managers. Qualitative data collection is a well-suited method to understand the experience of implementing a reserve study because qualitative information can assess intangible effects in a way that quantitative measures cannot.

Typically, quantitative investigations require the researcher to be able to control the experiment in order to test specific variables against an untainted sample. In the case of studying the social impacts of preservation policies, there are infinite variables that can influence the research topic. A historic site might embody religious, aesthetic, research, environmental or other significant values that are unmeasurable with quantitative methods alone. Visitation numbers, for example, might be used as a quantitative assessment, but do not necessarily correlate to the importance of a site and why it should be preserved. The lack of standardized tools for measuring the social importance of preservation work has led the historic preservation field to borrow evaluative tools from adjacent fields such as ethnography, anthropology, and sociology. The addition of qualitative methods has provided a more diverse vocabulary to characterize the social impacts of preservation work.

Qualitative social science techniques such as observation, description and interviews are subjective studies that attempt to understand how and why something happens in a complex system. These methods allow the researcher to characterize a complicated system without the need to control specific variables. For example, a patient can describe the location and severity of pain in an interview with a doctor without

needing to specify the ailing biological component. Thus, qualitative techniques are helpful where the goal is to understand the lived experience within a specific situational context. In the same way, qualitative techniques might be used to assess the experience of a steward implementing reserve study recommendations in a religious facility.

This research used semi-structured qualitative interviews because they are the qualitative interview technique most appropriate for evaluating experiential data. Semi-structured interviews rely on a series of standard questions that are asked of each subject. Subjects’ unstructured responses to structured questions are compared to expose patterns between their experiences. Semi-structured interviews were preferable to unstructured interviews in this study because unstructured interviews are most accurate in conjunction with situational observations, which were not feasible given the geographic distribution of the subjects. Surveys or structured interviews with standardized questions and answers were not chosen because they determine rational answers rather than describe complex phenomenon. Semi-structured qualitative interviews actively produce meaning through collaborative discussion with the researcher and allows experiences to be shared using standardized open-ended questions. The ability to veer off script with this type of interview also provides the interviewer with the opportunity to check their comprehension of the subject’s interpretation or experience in order to collect accurate data. Semi-structured interviews can be developed into case studies to characterize and

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compare the experiences of religious buildings stewards who employ reserve studies to manage their facilities.

### 3.3 Importance of Case Study Research

Case studies suit qualitative interviews because they allow for the for understanding of contemporary events within a complex environment where the researcher cannot control variables. The ability to characterize experiences in context makes case studies rich territories for exploring “how” and “why” questions which enable an understanding of management styles and organization.\(^{55}\) There are three common types of case studies: exploratory, descriptive, and explanatory. Exploratory research provides information about new fields of study and lays the groundwork for future research.\(^{56}\) Descriptive case studies focus on different situations that highlight particular issues to better understand causal relationships.\(^{57}\) Explanatory case studies compare situations to provide evidence for a specific conclusion.\(^{58}\) These categories are not mutually exclusive but demonstrate the advantages of application for case studies as a research tool. This research will produce exploratory, descriptive case studies to characterize the growing number of congregations that utilize reserve studies. It will also draw situational contrasts between their experiences to fully explore the applications of reserve studies. The purpose of comparing case studies developed from qualitative

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\(^{56}\)Ibid. 15.

\(^{57}\)Ibid. 15.

\(^{58}\)Ibid. 15.
interviews is to locate common themes between particular types of responses in order to form a grounded theory about reserve study usage by stewards of heritage sites.

3.4 Grounded Theories

A grounded theory is an inductive reasoning research method that is used to analyze qualitative data by identifying key trends. Unlike quantitative research, qualitative data collection does not predetermine variables to test because the research context may be too complex to isolate specific factors. Grounded theory analysis allows influential variables to emerge from patterns found in the data collected. Qualitative research methods can also be adapted as data is being collected in order to gather more detailed information. This allows better characterization of emergent trends and the formation of a grounded theory.

Through the discussions with various building stewards, five broad categories of experiential data emerged: background, building, internal structure, fundraising, and reserve study experience. These topics generally categorized the information that was conveyed by the interviewees and allowed the researcher to draw comparisons between the various lived experiences. From those comparisons, several overall trends emerged into two distinct patterns of reserve study usage that correlated to the age of the building.

3.5 Potential for Error and Bias

The case studies used for this thesis may be unrepresentative because of the small sample size due to the scarcity of qualified candidates. Unlike municipalities or other private entities, there is not mandate for religious organizations to issue public requests for proposals. Nor are religious organizations required to publicize internal guiding documents, like home owners’ associations. Interviewee candidates for this research were sourced through personal networks, professional advertisements, and internal documents published online by religious organizations. The unscientific selection of subjects is less problematic for case study research projects because the purpose is to characterize a complex system rather than conclusively test a hypothesis by manipulating variables.

Transparency is a critical aspect of the subjective nature of qualitative data collection. None of the interviewees were given the questions ahead of time. All were asked the same questions, even if each conversation varied. The conversations were not recorded because it was determined that rigorous notes would provide a sufficient level of detail necessary to probe the subject. This research project did not warrant the level of detail required to delve into the semantics of each response.

3.6 Method Summary

The goal of conducting semi-structured interviews in this study is to explore how religious organizations use reserve studies to make decisions about their buildings in order to locate common ground between their shared experiences and provide some evaluation of the effectiveness reserve studies as a facilities management tool. The heritage management field uses several qualitative and quantitative methods to measure
the social impacts of preservation work. The impacts of reserve studies as defined by the professional industry are intangible and tangible, but this research will focus on the qualitative experience of using a reserve study. Ethnographic and sociological qualitative research methods have been successfully adopted by the preservation field to characterize the intangible effects of their work. Structured questions and unstructured responses were chosen as the data collection method for this project because semi-structured interviews can characterize complex systems in context, do not require the researcher to control for variables, and can probe the lived experience of research subjects. Qualitative data gathered from the interviews can be used to create case studies which can be compared to identify key trends in the use of reserve studies by religious stewards. Qualitative analysis allows common themes between particular types of responses to emerge in order to form a grounded theory about the research study subject, reserve study usage. This research project may incur bias from the small sample size and scarcity of qualified candidates, however; the exploratory nature of these case studies lends itself to valuing any information as rich territory for future research. By evaluating reserve studies and the effect of a maintenance backlog on the use of reserve studies, suggestions can be made to help adapt reserve studies for historic properties.
4. CASE STUDIES – RECENT BUILDINGS

4.1 Introduction to Case Studies – Recent Buildings

Stewards of recent religious buildings were interviewed to determine how reserve studies are used by religious organizations without a significant amount of deferred maintenance. Stewardship of non-historic religious buildings was explored to establish a baseline for the use of reserve studies to be compared to the experience of stewards of historic properties to characterize the effect of building age on the use of reserve studies as a facilities maintenance planning tool. Recently constructed buildings are generally in better condition than their historic counterparts because, aside from unexpected failures, newer components are at an earlier point in their service lives. There are also fewer environmentally driven problems for recently constructed buildings because the environmental drivers of deterioration require time to cause significant damage. For these reasons, organizations in recently constructed facilities can use reserve studies as a preventive rather than reactive maintenance planning tools. The following case studies provide a model for the use of reserve studies by recent religious organizations, which may also be applied to congregations in historic houses of worship during or after organizations address their deferred maintenance issues.
4.2 Recent Building Case Study 1: Epworth United Methodist Church, Rehoboth, DE

<table>
<thead>
<tr>
<th>Epworth United Methodist Church</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Location</strong></td>
<td>Rehoboth, DE</td>
</tr>
<tr>
<td><strong>Denomination</strong></td>
<td>United Methodist Church</td>
</tr>
<tr>
<td><strong>Founding Date</strong></td>
<td>1873</td>
</tr>
<tr>
<td><strong>Total Membership</strong></td>
<td>700</td>
</tr>
<tr>
<td><strong>Building Construction Date</strong></td>
<td>2005</td>
</tr>
<tr>
<td><strong>Architectural Style</strong></td>
<td>Colonial Revival Style Ranch</td>
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<tr>
<td><strong>Floor Area</strong></td>
<td>48000 sq. ft.</td>
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<tr>
<td><strong>Number of Buildings</strong></td>
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</tr>
<tr>
<td><strong>Date of Reserve Study</strong></td>
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<tr>
<td><strong>Annual Operating Budget</strong></td>
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<td><strong>Annual Reserve Contribution</strong></td>
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<tr>
<td><strong>Funding Strategy</strong></td>
<td>Member supported annual giving supplemented with direct asks</td>
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<td><strong>Cash Flow or Component</strong></td>
<td>Component</td>
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<tr>
<td><strong>Interviewee</strong></td>
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</tr>
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<td><strong>Number of Staff</strong></td>
<td>13</td>
</tr>
<tr>
<td><strong>Number of Building Specific Staff</strong></td>
<td>2</td>
</tr>
</tbody>
</table>

Table 3 Fast facts table for Epworth Rehoboth, a United Methodist Church, Rehoboth, DE.

Epworth United Methodist Church is a historic religious community that grew up alongside the seaside town of Rehoboth, Delaware. The congregation first met in 1873 in tents in the downtown area as the Rehoboth Beach Camp Meeting Association of the Methodist Episcopal Church. In 1897 the congregation built their first church but it burnt down in 1914. The congregation rebuilt their facilities in 1914 and continuously added to their 1914 campus until there was no more room for expansion on their downtown lot. The congregation moved in 2008 to a purpose-built facility outside of the

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downtown Rehoboth area for a number of reasons. Two of the three Sunday services in the old building were typically overflowing, there was little room for mission-related work, and the preliminary cost estimates for the repairs necessary to continue to occupy the building were too expensive for the congregation.\footnote{Kenny Mahan (Safety & Loss Prevention Manager at Epworth UMC) in discussion with the author, March 4, 2019.} When asked about selling the old church the current facilities staff person, Kenny Mahan, said, “My head said absolutely, but my heart was breaking.”\footnote{Ibid.} Moving was a difficult decision for the congregation. Many wanted to stay in the historic space, but it was unfeasible given their resources.

When maintenance issues arose in the old building, the congregation diverted money from other projects or programs to afford the repairs. Limited resources led to temporary or inadequate solutions that did not address the underlying causes of damage. The “duct tape method” was used to hold the building together until the congregation could sell the building and build their current facilities. After the move, the church developed an internal practice of proactive care for their facilities. Learning from the past, Epworth UMC is careful to maintain its newer building. The congregation’s philosophy towards the old building was the “duct tape method.”\footnote{Ibid.} As the warranties for the major components began to lapse, the church decided to create a plan for how they were going to fund future repairs. Kenny Mahan believes it was a consulting firm who
determined that the reserve study format would best suit the needs of the congregation. Their reserve study report was completed in 2015.

![Epworth UMC's 2008 campus in a suburb of Rehoboth, DE.](Photo by Ryan Mavity, Epworth United Methodist Church, Cape Gazette. May 2, 2014.)

Different people are responsible for implementing the reserve study recommendations at Epworth UMC. A volunteer routinely inspects the building and communicates potential issues to the Property and Ground Committee. Staff work with the Property and Grounds Committee to internally update the reserve study recommendations to create a prioritized project list and an annual maintenance plan. The Finance Committee uses the reserve study estimates to incorporate annual maintenance, repair costs, and reserve funds for future work into the annual operating budget. The annual budget is approved by the Church Council and funded by member giving. Staff carry out routine maintenance and contract experts for major repairs using the resources allocated from the annual budget. When scheduled maintenance is determined to be
unnecessary, the funds are left intact for the future work rather than being diverted towards unexpected costs, such as early component failures.

Proactive planning has allowed Epworth UMC to support maintenance and repairs primarily through annual giving, but the Property and Grounds Committee has made several direct asks from the congregation for specific items that have fallen outside of the reserve study scope. Unexpected costs come in many forms such as early component failures, gifts, and accidents. The most expensive shock came when an air handler that served three classrooms failed. Staff alerted the Property and Grounds Committee to the problem. The Property and Grounds Committee reached out directly to the congregation for the funds to replace the component. The committee raised $15,000 in a week, and the new air handler is much more energy and cost efficient.

Another unexpected cost came from the gift of a walk-in freezer. A nearby nursing home was closing and offered the church a reduced price for their walk-in freezer. The original design of Epworth’s most recent building only included one upright refrigerator for each of their two kitchens. The church was eager to expand their food storage capacity, but did not have funds available in the annual budget for the walk-in freezer. The Property and Grounds Committee asked for and received congregational support to purchase the walk-in freezer. With the added food storage capacity, the congregation was able to expand their food pantry program. They now distribute over 107,000 lbs. of food that would otherwise have been thrown away. Maintenance for the walk-in freezer was added as a line item cost to the reserve study and included in later annual budgets.
Accidents and acts of nature are typically covered by Epworth UMC’s insurance policy or emergency fund, but natural disasters can lead to modifications of their reserve study. An intense storm blew off the church’s steeple cross a few years ago. Insurance covered the cost of the cross’ replacement, but the church took notice of the cause of the detachment. Since the incident, the Property and Grounds Committee have budgeted for a biannual expert inspection of the steeple and set aside reserve funds for a replacement gasket for the cross.

However, some major capital projects have been excluded from the reserve study report which could become a long-term risk to the sustainability of Epworth UMC. The scope of Epworth’s reserve study is fairly comprehensive, but entire systems replacements, such as elevators, tile roofs, and internal wiring or plumbing, are excluded because they have “an estimated useful service life that exceeds the useful life of the facility or community itself.” This statement could better be interpreted as the useful service life exceeds the scope of the reserve study horizon. As the horizon of the 2015 reserve study scope approaches, the congregation may consider updating their reserve study to include long-term replacements. Overall, the use of a reserve study has served this congregation well but they congregation must continue to update the document to account for changes to their reserve study scope and to ensure the accuracy of their cost estimates.

4.3 Recent Building Case Study 2: Peachtree Presbyterian, Buckhead, GA

<table>
<thead>
<tr>
<th>Peachtree Presbyterian Church</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Location</strong></td>
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<tr>
<td><strong>Denomination</strong></td>
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<tr>
<td><strong>Founding Date</strong></td>
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<tr>
<td><strong>Total Membership</strong></td>
</tr>
<tr>
<td><strong>Date of Building Construction</strong></td>
</tr>
<tr>
<td><strong>Architectural Style</strong></td>
</tr>
<tr>
<td><strong>Floor Area</strong></td>
</tr>
<tr>
<td><strong>Number of Buildings</strong></td>
</tr>
<tr>
<td><strong>Date of Reserve Study</strong></td>
</tr>
<tr>
<td><strong>Annual Operating Budget</strong></td>
</tr>
<tr>
<td><strong>Annual Reserve Contribution</strong></td>
</tr>
<tr>
<td><strong>Funding Strategy</strong></td>
</tr>
<tr>
<td><strong>Cash Flow or Component</strong></td>
</tr>
<tr>
<td><strong>Interviewee</strong></td>
</tr>
<tr>
<td><strong>Number of Staff</strong></td>
</tr>
<tr>
<td><strong>Number of Building Specific Staff</strong></td>
</tr>
</tbody>
</table>

Table 4 Fast facts table for Peachtree Presbyterian, Buckhead, GA.

Peachtree Presbyterian Church began as a Sunday school for children in Buckhead, Georgia in 1910. C.S. and Ida Honour started the youth outreach ministry as a means of healing from the loss of their five-year-old son. Their faith community grew quickly, and by 1919 the church was officially chartered by the local Presbytery. In 1928, the congregation built their first building, a grey granite church, in the heart of Buckhead but later moved outside of town to a new purpose-built campus in the 1960’s.65 Peachtree Presbyterian had fewer than 3,000 members in the 1970’s. By the end of Rev. W. Frank Harrington’s tenure in 1999, Peachtree was the largest Presbyterian Church in the United

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States with 11,000 members. Current membership is around 6,500 and average weekly attendance is about half of that.

![Figure 2 Aerial view of two of Peachtree's five buildings: the main chapel and connecting gym.](Photo credit: Collins Project Management. Peachtree Aerial. February 2018)

Peachtree Presbyterian’s present campus dates from the 1960’s and reflects their longstanding dedication to providing community, youth, and family services. The church owns and operates five structures: the main church, a connected YMCA gym, an adjacent chapel, a parking deck, and a youth center/coffee shop across the street. A legacy property was recently donated to the church, but its function has yet to be determined. In total, the Peachtree campus has 450,000 square-feet of internal space set on a 26-acre

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Peachtree Presbyterian’s large campus and diverse facilities pose a significant management challenge that is alleviated by their reserve study which was completed in 2014.

The current facilities director at Peachtree Presbyterian Church, Charles Hodnett, was hired three years ago after working in a similar role at a nearby historic church for twenty-three years. Peachtree Presbyterian’s preventive approach towards their facilities and their reserve study predate Hodnett’s tenure. Hodnett says despite the adjustment to managing a much larger, diverse facility, it was a “major relief” to switch from a reactive to a proactive approach towards maintenance.

Actions on the reserve study recommendations had been deferred because of vacant staff positions prior to Hodnett’s employment at Peachtree. Hodnett has been able to utilize the reserve study to work to reduce the project backlog. From 2016-2019, Hodnett and his team have replaced a chiller, a few HVAC units, and flooring. Peachtree Presbyterian has caught up to their recommended facilities management plan, and it is currently on schedule with maintenance and repairs.

There are currently seven full-time maintenance staff that care for the Peachtree campus. Staff members work with several different volunteer committees to plan for and fund maintenance and repairs. A Property Committee in collaboration with staff creates an annual budget that includes funds for regular care, upcoming repairs recommended by the study, and reserves for future work. A Fundraising Committee approves the Property

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67 Charles Hodnett (Facilities Director at Peachtree Presbyterian Church) in discussion with the author, March 18, 2019.
68 Charles Hodnett (Facilities Director at Peachtree Presbyterian Church) in discussion with the author, March 18, 2019.
Committee’s requests for funds. Both committees report to the Session of Elders, a group of lay leaders that represent the interests of the church. Members of all committees rotate every eighteen months. Many of the same people move to different leadership roles so there is a consistent institutional memory. Occasionally there are new members, but they are on-boarded by the existing leadership.

The annual operating budget is entirely member supported. Capital campaigns are infrequent, large, and tend to support new construction. The last capital campaign from 2004-2007 raised thirty-two million dollars to construct the youth center/coffee shop across the street and the parking deck behind the gym. There have been a few unexpected early failures, such as a chiller, but the buffer maintained by the reserve study has been enough to cover the cost of the relatively few surprises. The reserve study has been useful for Peachtree to prioritize mission related-spending while managing its large and diverse campus.
4.4 Recent Building Case Study 3: Peninsula Temple Sholom, Burlingame, CA

<table>
<thead>
<tr>
<th>Peninsula Temple Sholom</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Location</strong></td>
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<tr>
<td><strong>Denomination</strong></td>
</tr>
<tr>
<td><strong>Founding Date</strong></td>
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<tr>
<td><strong>Total Membership</strong></td>
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<tr>
<td><strong>Date of Building Construction</strong></td>
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<td><strong>Floor Area</strong></td>
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<td><strong>Number of Buildings</strong></td>
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<td><strong>Date of Reserve Study</strong></td>
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<td><strong>Annual Operating Budget</strong></td>
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<td><strong>Annual Reserve Contribution</strong></td>
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<tr>
<td><strong>Funding Strategy</strong></td>
</tr>
<tr>
<td><strong>Cash Flow or Component</strong></td>
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<tr>
<td><strong>Interviewee</strong></td>
</tr>
<tr>
<td><strong>Number of Staff</strong></td>
</tr>
<tr>
<td><strong>Number of Building Specific Staff</strong></td>
</tr>
</tbody>
</table>

Table 5 Fast facts table for Peninsula Temple Sholom, Burlingame, CA.

Twenty-two families organized Peninsula Temple Sholom in a backyard greenhouse in Hillsborough, CA in May of 1955.<sup>70</sup> The congregation worshiped in a nearby Congregational church until they remodeled a building soon after their founding. By 1957, they had outgrown the remodeled building. The Board of Trustees purchased four acres of property and hired architect Leonard Michaels to design their temple. The

<sup>69</sup> Peninsula Temple Sholom did not provide the total membership number. The interviewee estimated that there were 675 families in the congregation but gave no qualification for average family size.

building was dedicated in 1961. The congregation continued to grow throughout the end of the 20th century, focusing especially on mission outreach in the form of an athletic league, adult education, and mentorship programs. The desire for more space came to fruition with an addition built in 2000.

There are three full-time staff that take care of the temple. The lay leadership, with the exception of one key person, does not have significant input on the building maintenance. Staff coordinate with the key lay leader to determine the following year’s annual maintenance needs. Their budgets and project proposals are submitted to the Board of Trustees who incorporate their needs into the overall annual financial plan.

71 Karen Wisialowski, (Chief Community Officer at Peninsula Temple Sholom) in discussion with the author, March 15, 2019.
Peninsula Temple Sholom has a long history of strategic planning and proactive maintenance. Their preventive approach dates back to the early 1990’s when the temple was planning to add their auxiliary building. A key layperson, the same individual who is still involved with the current site management, advocated a proactive approach towards maintaining and funding Peninsula Temple Sholom’s existing and future facilities while capital project planning for the new building was ongoing. The current staff is unsure when and why the temple switched to the reserve study format. The current recent reserve study was written in 2015, immediately prior to facilities director’s employment at the temple.\textsuperscript{72}

Peninsula Temple Sholom has been fortunate to avoid significant unexpected expenses. All of the initial component failures have been funded by the temple’s current reserve funds. An interesting exception is an experimental bamboo floor in the addition built in the 2000’s which has worn faster than predicted. The congregation cannot afford to replace the floor prior to its scheduled replacement date, but it has allocated more funds from the reserve to pay for frequent resurfacing until it can be replaced. When budgeted maintenance is not required, the money for the project remains in the reserve fund for future implementation rather than shifting to other work. If an emergency situation arises, the staff feels comfortable that their cash reserves would be able to cover it.

\textsuperscript{72} Karen Wisialowski, (Chief Community Officer at Peninsula Temple Sholom) in discussion with the author, March 15, 2019.
The reserve study has helped staff at Peninsula Temple Sholom plan for regular maintenance, but like Epworth UMC’s reserve study, some important capital projects are outside the scope of the report which could pose long-term financial problems. The congregation is aware that they will need to seismically retrofit their buildings, but they have neither a reserve fund nor a plan for how or when they will address the problem. In the end, the reserve study has provided well for routine maintenance, but not for larger...
projects. The facilities director believes that the temple will fund items that fall outside the scope of the reserve study with capital campaigns.

4.5 Results and Summary of Case Studies – Recent Buildings

Despite their geographical and denominational differences, stewards of recent religious organizations use reserve studies in similar ways. The religious organizations interviewed in this study have similar internal structures to implement reserve study recommendations. Stewardship responsibilities are typically divided into three groups – property needs, financial planning, and overall governance. The property group is generally responsible for monitoring the facilities, updating the reserve study, and implementing maintenance and repair projects. Representatives from the building group work with the finance group to create an annual budget to fund regular maintenance, repairs, and reserves for future work. The governing body of each religious organization is responsible for approving and funding the budget. Epworth UMC and Peachtree Presbyterian have these roles filled by three different committees staffed by lay leaders with some participation from paid staff. Epworth UMC has a Property and Grounds Committee, a Finance Committee, and a Church Council. Peachtree Presbyterian has a Property Committee, a Finance Committee, and a Session of Elders. Peninsula Temple Sholom has a slightly different structure, but the roles are still the same. The building and finance responsibilities are assumed by paid staff who regularly report to the governing organization which is a Board of Trustees comprised of lay leaders. The exact division of labor and subcommittee titles differ by congregation, but the general internal structure is remarkably similar.
For all of the congregations, an internal tradition of preventive maintenance preceded the commissioning and use of reserve studies. The stewards interviewed at Epworth UMC and Peninsula Temple Sholom both clearly remember the impetus for their preventive approaches. Epworth UMC switched from a reactionary approach to preventive maintenance when they moved from their historic building into their current facilities. Their drive to proactively maintain their facilities is fueled by the emotional memory of the sale of their historic building as a result of deferred maintenance.  

Peninsula Temple Sholom was guided by a key lay leader to incorporate proactive facilities maintenance into their overall management practices. Reserve studies appear to be an outcome of either an institutional approach towards preventive maintenance approach or key initiative pushed by important stakeholders rather than the driving cause of a long-term perspective towards facilities management.

Stewards of recent religious organizations use reserve studies to plan for facilities maintenance and repairs, but unexpected expenses still occur. For small unexpected expenditures, religious organizations utilize buffer funds from their reserves. None of the organizations interviewed for this study reallocated reserve funds towards other projects. Instead, unused funds remained in the reserve for the component line item that they were assigned to, to be used when required in the future. In the case of expenditures that were outside the scope of the annual budget but did not warrant a unique campaign, all of the participating organizations directly asked their constituents for support for unexpected

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73 Kenny Mahan (Safety & Loss Prevention Manager at Epworth UMC) in discussion with the author, March 4, 2019.
74 Karen Wisialowski, (Chief Community Officer at Peninsula Temple Sholom) in discussion with the author, March 15, 2019.
building related expenditures. Capital projects like the whole systems replacements for Epworth UMC or seismically retrofitting Peninsula Temple Sholom were typically excluded from the reserve study report. To fund extraordinary repairs, congregations plan to rely on capital campaigns. Capital campaigns are more successful when completed infrequently because donors can become fatigued or uninterested if they are tapped too often. Reserve studies can help congregations reduce the number of capital campaigns necessary to fund building repairs and maintenance, allowing congregations to use capital campaigns for other mission-related opportunities like Peachtree’s and Peninsula Temple Sholom’s additions or Epworth UMC’s mortgage reduction campaign.

Reserve studies are useful facilities management tools for stewards of recent religious organizations because they reduce the need for building focused capital campaigns and allow congregations to save money for other spending priorities. Reserve studies also give congregations the ability to better predict the scale of their maintenance and larger project costs. Remaining within a strict financial plan is important for organizations like faith-based groups which rely on member support for their operating budgets. In the case of emergencies and larger projects that cannot be funded by this account, congregations rely on generous extraordinary giving from their members. With the help of reserve studies and accurate budgeting, building-related asks can be more successful due to their infrequency. This allows congregations in recent buildings to use their capital campaigns for other opportunities such as debt reduction and new construction.

5. CASE STUDIES — HISTORIC BUILDINGS

5.1 Introduction to Case Studies – Historic Buildings

Unlike stewards of recent buildings, stewards of historic buildings must plan for preservation-focused capital campaigns while providing for and addressing routine maintenance. A recent study found that a quarter of congregations in historic buildings allocate 40% or more of their annual budget to property care.76 When finances are limited, organizations may choose to defer maintenance in lieu of spending for other priorities. Temporary or inadequate repairs can compound existing issues past the price point that a congregation can afford. The unfortunate cycle of deferred maintenance is a self-reinforcing feedback loop which can deplete organizational resources.77 Booming urban real estate markets make these large, beautiful, often centrally located buildings appealing to developers. Finding a way to break the cycle of deferred maintenance is critical to the long-term sustainability for religious organizations housed in historic buildings. Reserve studies can help a congregation address maintenance issues as they occur and financially plan for future capital preservation projects.

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5.2 Historic Building Case Study 1: Glen Ellyn United Church of Christ, Glen Ellyn, IL

<table>
<thead>
<tr>
<th>First Congregational Church of Glen Ellyn</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Location</strong></td>
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<tr>
<td><strong>Denomination</strong></td>
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<tr>
<td><strong>Total Membership</strong></td>
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<td><strong>Number of Staff</strong></td>
</tr>
<tr>
<td><strong>Number of Building Specific Staff</strong></td>
</tr>
</tbody>
</table>

Table 6: Fast facts table for the First Congregational Church of Glen Ellyn, IL.

The town of Glen Ellyn, IL, began as a historic intersection of Native American trails known as Stacy’s Corners. Deacon Winslow Churchill emigrated to the area from New York in 1834, and soon more homesteaders joined. In 1849, the village negotiated a coveted stop on the railroad that was being built to cross the region. The First Congregational Church of Glen Ellyn (FCCGE) was the first religious organization in the town which was founded in 1862. Their current Gothic Revival building was completed in 1928, with two additions in the 1960s and 2000s.
There have been several capital campaigns at the First Congregational Church of Glen Ellyn since their last new construction project in 2000. A capital campaign was held from 2003-2004 to retire the debt from the 2000 addition. The congregation ran another capital campaign in 2006 to fund masonry tuck pointing and roof work. FCCGE’s reserve study was commissioned in 2014 after their 2013-2014 capital campaign allowed more preservation work. The funds from their most recent campaign in 2018 will support yet another preservation project set to begin the summer of 2019.
The driving force behind FCCGE’s reserve study was a member’s donation for a strategic plan to address their building issues. The member did not specify the reserve study format. The report choice may have come from other board members who had experience with condominiums or from the consulting firm contracted to create the report.78

The professional reserve study organization hired to complete the study worked primarily with the condominium market and had no prior preservation experience. As a result, the firm used an adapted version of a typical reserve study to assess the facilities, which was not well tailored to the specific needs of the historic building. The reserve analyst did not consider the significance of the building components or the extended service lives of historic components in their recommendations. For example, the reserve study recommended that the congregation should replace their historic stained-glass windows. The congregation chose to restore their stained-glass windows instead. Restoration was more cost effective than the replacement budgeted by the reserve study.

The reserve study completed for First Congregational Church Glen Ellyn had the lowest level of detail reported in this thesis. The inexperience of the firm with historic components and the lack of detail of the reserve study reportedly caused the timing of projects and the schedule of payments to be inaccurate.79 For example, the study recommended replacing the carpet in the sanctuary a few years prior to repairing the ceiling, a project that would possibly damage the new carpet. The Administration and Property Committee at FCCGE completed a thorough reorganization of the reserve study

78 Andy Ginger and Ted Harman (Lay Leaders from the Property and at Glenn Ellyn United Church of Christ) in discussion with the author, March 5, 2019.
79 Ibid.
at the beginning of 2019. Estimates that were within the realm of the experience of the reserve analyst, such as parking lot maintenance, were used by the congregation, other predictions about the treatment of their historic components were updated by the congregation. Their revisions included changing the recommended repairs to reflect the actual condition of their building, obtaining more accurate assessments of specialty components such as their clay-tile roof, and rearranging the project timeline and budgets to reflect their findings. While the reserve study had flaws, the format did help the congregation fund and carry out maintenance. The updated report informed a capital campaign and other significant preservation project planning. As of spring 2019, the congregation has completed most of the 2014-2016 reserve study maintenance recommendations.

At First Congregational Church Glen Ellyn, members of the Property Committee work with the Finance Committee to budget for repairs. Typically, the Finance Committee is responsible for creating the congregation’s annual budget and managing the capital campaign funds. Both committees report to the Church Council which governs all church activities. All committees are composed of lay leaders that rotate on an annual basis. A part-time maintenance staff person was hired in the summer of 2017, three years after the reserve study was completed, to help manage ongoing repair projects. This part-time staff person and members from the Administration and Property Committee work together to implement regular maintenance and major repairs.

Prior to the 2018 include reserve study date after the study reserve contributions were drawn from annual donations. After the 2018 capital campaign, the congregation made reserve contributions from the capital campaign funds. This created tension
between congregation members regarding the creation of a building-specific endowment fund. In 2018, a few members specifically gave contributions to the endowment funds, stipulating that only the interest of these funds could be put towards the 2018 capital campaign. Conversely, other members felt that building a large endowment discouraged active giving, and they did not want an endowment fund. This issue has not been resolved internally.

The money that is reserved for projects in the future is occasionally diverted towards time sensitive work, with a certain amount kept as a buffer for unexpected expenses. This method of funding resembles the cash flow method. Rather than spending reserves for specific components, the congregation is using their reserve to support regular maintenance and work on capital projects. Although less predictable and reliable than the component method, this cash flow method is allowing the First Congregational Church of Glenn Ellyn to begin to provide for their building. The First Congregational Church of Glenn Ellyn is committed to preserving their church and is working towards reducing their maintenance backlog, one project at a time.
5.3 Historic Building Case Study 2: The First Presbyterian Church, Philadelphia, PA

<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Location</strong></td>
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<tr>
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</tr>
<tr>
<td><strong>Denomination</strong></td>
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<tr>
<td>Presbyterian</td>
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<tr>
<td><strong>Total Membership</strong></td>
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<td>200</td>
</tr>
<tr>
<td><strong>Founding Date</strong></td>
</tr>
<tr>
<td>1698</td>
</tr>
<tr>
<td><strong>Date of Building Construction</strong></td>
</tr>
<tr>
<td>1869</td>
</tr>
<tr>
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<tr>
<td><strong>Number of Buildings</strong></td>
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<tr>
<td><strong>Date of Reserve Study</strong></td>
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<tr>
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<td><strong>Annual Operating Budget</strong></td>
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<tr>
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<td><strong>Cash Flow or Component</strong></td>
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<tr>
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<td><strong>Interviewee(s)</strong></td>
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</tr>
<tr>
<td><strong>Number of Staff</strong></td>
</tr>
<tr>
<td>8</td>
</tr>
<tr>
<td><strong>Number of Building Specific Staff</strong></td>
</tr>
<tr>
<td>2</td>
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</table>

Table 7 Fast facts table for the First Presbyterian Church in Philadelphia, PA.

The First Presbyterian Church in Philadelphia was founded in 1698, just 16 years after the arrival of William Penn. The congregation split in 1743, but it was reunited in 1949. Both congregations have occupied a total of four different, purpose-built buildings in various downtown Philadelphia locations. Their current building was designed by the notable architect Henry Sims and constructed by the Second Presbyterian Church in 1869 and. The tower was added by another well-known architect, Frank Furness, in 1901. Architect Theophilus Chandler added a parish hall in 1884. Both buildings were

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https://static1.squarespace.com/static/595d65a4ff7c50d877d0c81e/t/596d009e20099ea763808ed8/1500316004161/FPC_History_Timeline.pdf
connected and modernized in 1954. The first preservation project repairing the interior and stained-glass windows took place in 1985.

Figure 6 The historic portion of the First Presbyterian Church in downtown Philadelphia.


In 2010, the City of Philadelphia introduced an ordinance for the Periodic Inspection of Exterior Walls and Appurtenances. This ordinance requires buildings over 60 feet in height to have their facades examined for structural integrity. Experts noticed

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loose masonry on the building and warned First Presbyterian that they may not pass the inspection. The church responded with a large preservation project that restored some of the exterior masonry and the stained-glass windows.

The congregation funded this work with the 1.2 million dollar Preserving First for our Future Campaign, which ran from 2011-14. After the campaign, the former pastor steered the church towards proactive stewardship of the building by commissioning the reserve study as his legacy for the congregation. The design team that completed the 2014 preservation project also completed the reserve study in 2018. First Presbyterian’s reserve study has a slightly different format than a typical professional standardized reserve study template. The report is an Excel spreadsheet (.xls) that catalogs all of the major building components, their condition, preservation recommendations, project priority, and estimated associated costs. The totals per year are divided into phases so that the congregation can carry out capital campaigns in anticipation of future work.

At present, the congregation is determining how they are going to implement the reserve study recommendations. A Capital Budget Committee and a Building Management Committee have recently been formed to fund and execute future work. The Building Management Committee is responsible for carrying out the report recommendations and updating the document as the situation changes. The Capital Budget Committee works with the members from the Building Management Committee to fund maintenance and special projects. Both committees are overseen by a Session Board of Elders and Board of Trustees. The Board of Trustees makes most of the

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85 Susan Riemann (Office Administrator at First Presbyterian Church) in discussion with the author, February 25, 2019.
business-related decisions but must collaborate with the Session Board of Elders to coordinate with the greater congregation. The members of all boards rotate regularly, but many of the same people are often called for similar leadership roles.

First Presbyterian’s operating budget is funded by annual member giving but subsidized with interest from their significant endowment. This endowment comes from deceased parishioners’ bequests. Despite having this large endowment, the congregation took out a 1.5-million-dollar loan from the Presbyterian Church, which offers low interest loans for building repairs. The congregation chose to take on debt because the loan payments were less expensive than reducing their endowment and its returns. As a bonus, a portion of the loan’s fee goes towards a grant for smaller Presbyterian Churches that need financial help for their buildings. The congregation is still paying off the loan used for the emergency repairs, but it is considering another loan and capital campaign to help fund the second phase of necessary repairs and reserves for maintenance. The Building Management Committee will begin working on some of the reserve study recommendations in the summer of 2019.

5.4 Results and Summary of Case Studies – Historic Buildings

Reserve studies can play a pivotal role in breaking the pattern of deferring maintenance. Historic building preservation requires repeated capital campaigns to repair issues related to the age of the facilities. First Presbyterian had their first preservation campaign in 1985, addressed emergency masonry and exterior work in 2014, and expects...

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86 Susan Riemann (Office Administrator at First Presbyterian Church) in discussion with the author, February 25, 2019.
to follow up with another preservation campaign in the summer of 2019.\textsuperscript{87} The First Congregational Church of Glen Ellyn completed their first preservation project in 2006, finished another in 2014, and are also about to begin a new preservation campaign starting the summer of 2019.\textsuperscript{88} Both the First Congregational Church of Glen Ellyn and First Presbyterian used their reserve study recommendations to implement maintenance while they planned or carried out capital projects. By providing for, and carrying out ongoing maintenance, these religious organizations can decrease deferred maintenance as they work to diminish their major project backlogs.

Despite the increased responsibilities of capital project planning in addition to regular maintenance, stewardship responsibilities for historic buildings are divided in a remarkably similar way to congregations in recent buildings. There are three broad categories of responsibilities: building care, financial planning, and overall governance. The First Congregational Church of Glen Ellyn has an Administration and Property Committee to oversee the building, a Finance Committee to fund the work, and a Church Council that governs both subcommittees. The First Presbyterian Church has a Building Management Committee and a Capital Budget Committee that report to both a Board of Trustees and a Session Board of Elders. Members of all boards are lay leaders that rotate regularly. The importance of lay leadership in daily facilities management is critical to the stewardship of these historic religious buildings because neither congregation has full


\textsuperscript{88} Andy Ginger and Ted Harman (Lay Leaders from the Property and at Glenn Ellyn United Church of Christ) in discussion with the author, March 5, 2019.
time staff dedicated to facilities care. The lack of full-time facilities staff has contributed to the deferred maintenance backlog and increased the difficulty of implementing their reserve study recommendations.

The choice of funding method, cash flow or component, is dependent on an organization’s existing resources. The cash flow method is most suited to help congregations with limited resources catch up on their deferred maintenance, address capital projects, and begin reserve funds. The First Congregational Church of Glen Ellyn had no reserve funds and a significant maintenance backlog when the reserve study was finished. The congregation completed a capital campaign in 2018 to fund the recommendations made in 2014. The majority of the capital campaign funds are being used for preservation projects, but an amount is being withheld to contribute towards a reserve for ongoing and future maintenance. This funding method is similar to the cash flow method. Members of the First Congregational Church of Glen Ellyn are conflicted about having an endowment because some believe it will discourage annual giving. Lack of reserves could put the First Congregational Church of Glen Ellyn at risk should their buffer be inadequate for any unexpected expenditures. The cash flow method produces a much closer relationship between funding and expenditures, but it has a smaller margin for error than the component method.89

Congregations with a steady income or other financing options can afford to reserve funds for each recommended line-item, following the component funding method. First Presbyterian has been able to use their endowment to supplement their

operating budget during capital campaigns and leverage denominational loans to cover their immediate building needs and contribute to reserves. First Presbyterian received their reserve study report in December of 2018, and it intends to implement their first major preservation-related recommendations during the summer of 2019. Their quick response time to the report’s recommendations is due to the availability of funding from the loans and endowment. Both the cash flow method and the component method work for religious organizations, but there is more of a financial buffer with the component method.

The standardized reserve study format does not include provisions for cultural significance, but there is no reason that the standardized reserve study format must be used to the exclusion of other formats. Hybrid formats that incorporate the cultural significance, physical assessment, and cost estimates may be more appropriate for stewards of historic buildings. The First Congregational Church of Glen Ellyn had a reserve format that was based off of a condominium reserve study that did not consider architectural or cultural significance. The congregation found that the recommendations regarding their historic features were inaccurate. The Administrative and Property team have divided the building into sections and are working on determining policies for the future care of each part. First Presbyterian’s takes the significance of components into account when determining the future treatment of items. Although First Presbyterian is not nominated to any historic register, the congregation does have a thorough building chronology and internal publication that identifies the character defining features of the building. The reserve study recommendations and costs reflect the First Presbyterian’s
priorities to retain as much of the original material when possible, recommending more repairs rather replacements.
6. SUMMARY RESULTS AND CONCLUSION

6.1 Summary

The purpose of comparing the experiences of stewards of recent and historic religious buildings is to understand the effects of a building’s age on the use of reserve studies as a facilities management tool. Well-respected heritage management organizations such as the International Council on Monuments and Sites and English Heritage recommend that stewards of historic buildings use a heritage management plan to sustainably care for their facilities.\(^{90}\) A heritage management plan identifies the values associated with a site and designs policies to protect its significance.\(^{91}\) The contents of a heritage management plan reflect the importance of nonmarket values in preservation by prioritizing the cultural significance and physical conservation over economic value. Cost estimates for repairs are not typically included in a heritage management plan because the manner in which the plan is implemented is determined by the site’s steward.\(^{92}\) Heritage management plans that do include cost estimates have proven to be successful for European site stewards to sustainably care for their heritage properties.\(^{93}\)


\(^{92}\) Ibid. 14-15.

Reserve studies may be a useful tool to help stewards of historic sites plan for the physical and financial needs of their facilities. The physical analysis contains a component inventory, conditions assessment, service life estimates, and the costs associated with maintaining, repairing, or replacing components for a minimum of twenty years.\(^9\) The financial analysis examines the status of an organization’s reserves and creates a funding plan to offset future expenditures. There are two popular funding methods for reserves: the component method and the cash flow method. The component method requires annual reserve contributions for each line item of a reserve study report for the remainder of its service life.\(^9\) This suggested contribution may be cost prohibitive for an organization with limited reserves or resources because the recommended contribution may involve more money over a shorter period of time to “catch up” to a fully funded state. Rather than fund line item components, the cash flow method has one pool of funding that covers annual expenses and retains a reserve amount above a certain threshold as a financial buffer. The cash flow method produces a much closer relationship between funding and expenditures but has a smaller margin for error than the component method. Regardless of the funding method, a reserve study could be a useful tool for heritage site managers to grow their resources.

Reserve studies were created by the common interest development industry to assist in the long-term management of shared assets. Common interest developments (CID’s) are a category of real estate that include condominiums, time shares, golf resorts,


schools, and religious organizations. CID’s are classified by common property and facilities which are provided for by a system of self-governance managed through an association. Narrowing the scope of this research to stewards of religious facilities provides a natural intersection between common interest developments and heritage site planning to draw practical conclusions about using reserve studies as a potential facilities management tool for heritage sites.

This research analyzed in-person interviews provided by three stewards of recent buildings and two stewards of historic buildings. Each interviewee was asked a similar set of questions and their responses were evaluated to determine patterns of reserve study use. Merging lessons learned from personal interviews is a proven method for assessing the social impacts of historic preservation work. Qualitative interviews are the best tool to evaluate experiential data because qualitative interviews are able to characterize complex systems without needing to control for specific variables. This study used a form of qualitative interviews known as semi-structured interviews. Unlike surveys or unstructured interviews, semi-structured interviews actively produce meaning through collaborative discussions between the researcher and subject. The advantage of semi-structured interviews is the ability to examine shared experiences and veer off script to check the researcher’s understanding of the subject’s experience. Qualitative interviews

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were developed into case studies to characterize and compare the effect of building age on the use of reserve studies as a facilities management tool.

6.2 Results

6.2.1 Recent Building Case Studies

Epworth Rehoboth Beach, is a United Methodist Church that was founded in Rehoboth Beach, Delaware, in 1873. The congregation sold their 1914 building in 2008 and expanded to a purpose-built church in a nearby suburb. After the move, the church developed an internal practice of proactive care for their facilities. As the warranties for the major components of their new building began to lapse, the church decided to create a plan for how they were going to fund future repairs. A reserve study report was completed in 2015. Proactive planning has allowed Epworth UMC to support maintenance and repairs primarily through annual giving. Early component failures and accidents have been able to be funded through direct asks from the congregation, allowing Epworth UMC to use capital campaign opportunities for other spending priorities. Epworth UMC began a 1.2-million-dollar capital campaign in 2017.99 As of June 2018 the congregation had $931,820 pledged.100 The capital campaign will continue through the end of 2019. Although some of the capital campaign money is being directed towards maintenance projects, the majority of the funds are being used for mortgage debt reduction. Some major projects were not included or fell outside the scope of the reserve study because they have “an estimated useful service life that exceeds the useful life of

100 “Imagine the Possibilities,” Epworth: A United Methodist Church Newsletter, June 2018.
the facility or community itself.”101 Epworth does not have an endowment or access to external funding so they will likely have to complete a capital campaign to fund major projects not included in the reserve study. Overall, the reserve study has successfully allowed the congregation to plan and provide for most of the building’s needs and carry out capital campaigns for other spending priorities.

Peachtree Presbyterian Church began as a Sunday school for children in Buckhead, Georgia in 1910. C.S. and Ida Honour started the youth outreach ministry as a means of healing from the loss of their five-year-old son. In 1928, the congregation built their first building, a grey granite church, in the heart of Buckhead, and they later moved outside of town to a new purpose-built campus in the 1960’s. 102 The congregation has since expanded their campus to reflect their longstanding dedication to providing community, youth, and family services. The church owns and operates five buildings: the main church, a YMCA gym, an adjacent chapel, a parking deck, and a youth center/coffee shop across the street. Their reserve study was commissioned in 2014. Implementing some of the reserve study recommendations was deferred early on because of vacant staff positions, but after the roles were filled, the maintenance staff has been able to catch up to the recommendation’s schedule. Maintenance, repairs, and reserves are funded entirely through member supported annual giving. There have been a few unexpected early component failures such as a chiller, but the buffer maintained by the reserve study has been enough to cover the cost of the relatively few surprises. Capital

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campaigns at Peachtree are large, infrequent, and tend to support mission-related new construction. The last capital campaign from 2007-2011 raised thirty-two million dollars to construct the youth center and coffee shop across the street, and the parking deck behind the gym. The reserve study helps Peachtree keep up with their facilities maintenance in order to focus on delivering mission-related services for their large membership.

Peninsula Temple Sholom in Burlingame, CA, first met in a backyard greenhouse in May of 1955. The Board of Trustees purchased four acres of property and hired architect Leonard Michaels to build a new facility, which opened in 1961. The temple built a second building in 2000 to expand their capacity for mission-related programming. A key layperson advocated for a proactive approach towards planning and funding maintenance, while capital project planning for the new building was ongoing. Several different formats of a strategic plan have been used by the temple since the early 1990’s. The current facilities director is unaware when and why the congregation switched to the reserve study format. Their most recent reserve study was completed in 2015. The temple funds maintenance, repairs, and reserves through member supported annual giving. The congregation does not have an endowment specifically for the building, but it does keep reserves to maintain, repair, and eventually replace components. All of the early component failures have been able to be funded by the temple’s current reserve funds. When budgeted maintenance is not required, the money for the project remains in the reserve fund for future implementation rather than shifting to other work. Some important capital projects, such a future seismic retrofit, are outside the scope of the report which could pose long-term financial problems. The facilities
director believes that the temple will fund capital preservation projects such as this with
capital campaigns. Peninsula Temple Sholom’s reserve study has been a useful tool for
the congregation to fund and plan maintenance and repairs through annual giving. It has
reduced, but not eliminated, the need for capital campaigns.

6.2.2 Historic Building Case Studies

The First Congregational Church of Glen Ellyn (FCCGE) was the first religious
organization founded in 1862 in Glen Ellyn, IL. Their current Gothic Revival building
was completed in 1928, with two additions in the 1960’s and 2000’s. The driving force
behind FCCGE’s reserve study was a member’s donation for the creation of a strategic
plan to address their building needs after significant preservation work was completed in
2013-2014. The professional reserve study company they hired had worked primarily
with the condominium industry and had no prior experience with historic buildings. The
inexperience of the firm with historic components and the superficial scope of the study
caused the timing of projects and the schedule of payments to be inaccurate. The
Administration and Property Committee at FCCGE completed a thorough reorganization
of the reserve study at the beginning of 2019, which included an updated project list,
revised cost estimates, and a grouping of projects into phased campaigns. The
congregation funds maintenance, repairs, and reserves with periodic capital campaigns.
There have been four capital campaigns at the First Congregational Church of Glen Ellyn
since their last new construction project in 2000. Their most recent campaign finished in

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103 Andy Ginger and Ted Harman (Lay Leaders from the Property and at Glenn Ellyn United Church of
Christ) in discussion with the author, March 5, 2019.
2018 funded the implementation of some reserve study recommendations. The money that has been reserved for projects is occasionally diverted towards time sensitive work, with a certain amount kept as a buffer for unexpected expenses. Although less predictable and reliable than saving for each component, this cash flow method is allowing the First Congregational Church of Glenn Ellyn to begin to provide for their building. While their reserve study had flaws, it has helped the congregation afford and carry out maintenance concurrent with a capital campaign to implement the more expensive recommendations. The congregation’s use of a reserve study has slowed their cycle of deferred maintenance, allowing the congregation to catch up on their project backlog.

The First Presbyterian Church in Philadelphia was founded in 1698, just 16 years after the arrival of William Penn. The congregation split in 1743, but it was reunited in 1949. Both congregations have occupied a total of four different, purpose-built buildings in various downtown Philadelphia locations. Their current building was constructed by the Second Presbyterian Church in 1869. In 2010, the City of Philadelphia introduced an ordinance that requires buildings over sixty feet in height to have their facades examined for structural integrity. The church responded with a large preservation project that restored some of the exterior masonry and the stained-glass windows. The congregation funded this work with a 1.2 million dollar, Preserving First for our Future Campaign, which ran from 2011-14. The former pastor took an interest in proactive stewardship as

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105 First Presbyterian Church. “Facilities Assessment Maintenance Program Q & A.” November 2018. Last Accessed April 1, 2019. https://static1.squarespace.com/static/595d65a4f7c50d877d0c81e/t/5be2f19cc2241b9d4d5416c0/1541599645670/FAMP_Q%26A_web.pdf
a part of his legacy for the congregation. In that spirit, the congregation commissioned a reserve study from the design team that completed the 2014 preservation project. The study has a slightly different format than a typical professional standardized reserve study template. This report is an Excel chart that describes all of the areas of damage, proposed scope of repair, associated cost, project priority, and three distinct phases of preservation work. The recommendations and associated cost estimates consider the historic significance of components and their proper treatment. The church is currently determining how they are going to implement the reserve study recommendations they received in late 2018. The congregation has a large endowment, but it is looking into loan options provided by their denomination. Although First Presbyterian’s reserve study is relatively recent, it has allowed the congregation to plan for the implementation of low-cost recommendations as early as summer 2019 while they continue to strategize for more expensive repairs.

6.3 Conclusions

There are many similarities between the uses of reserve studies by stewards of historic and recent buildings, but the primary difference between these two groups is that older buildings are likelier to have a large backlog of deferred maintenance. Regardless of age, the religious organizations surveyed use reserve studies to plan for maintenance, repairs, and reserve contributions. However, congregations in historic buildings have the added task of planning and fund raising for capital preservation projects to decrease their maintenance backlogs. Reserve studies can help stewards historic buildings stop the cycle of deferred maintenance, while allowing concurrent capital campaigning. Even so, the
cost of preservation projects can be prohibitive, as was the case with the cost of
rehabilitating Epworth UMC’s 1914 building. Understanding their financial situation
allowed Epworth UMC to build a more appropriate facility for their congregation’s
mission. Conversely, congregations in recent religious buildings do not have such a large
project backlog due to the newer condition of their components. Stewards of recently
constructed buildings who use reserve studies for budgeting and maintenance planning
can use extra capital for other spending priorities, such as mission-related programming.

Religious organizations in both historic and recent buildings divide their
stewardship responsibilities between remarkably similar internal structures. Three of the
five interviewed religious organizations have separate property and finance committees
that report to an overall governing board. The property group is accountable for
monitoring the facilities, updating the reserve study, and implementing maintenance and
repair projects. The finance group raises funds through capital campaigns, manages
reserves, and works with members of the property group to create an annual budget. The
governing bodies of these religious organizations are responsible for approving the
annual budget and coordinating fundraising with the greater congregation. The exact
division of the three stewardship responsibilities varies somewhat by faith tradition.
Peninsula Temple Sholom, a Reformed Jewish organization, has only two groups: a
group of lay leaders for governance, and staff to manage finance and property care. First
Presbyterian has five groups: one for property, another for finance, a business-oriented
governing board, the Board of Directors, and a parish-oriented governing board, the
Session of Elders. Despite these minor differences, property care, finance, and
governance are the typical divisions of responsibilities for the stewardship of religious
buildings. The division of labor is important because each group uses different parts of the reserve study and need to coordinate effectively with the others in order to implement the reserve study recommendations.

The religious organizations that were interviewed have internal cultures of proactive maintenance that long preceded the use of reserve studies as a facilities management tool. Similar to previous studies, this research suggests that internal leadership was the key factor that transitioned an organization from a reactive to a preventive mindset. In two cases a lay leader and in a third case the pastor, determined that the congregation needed to become proactive about their building. Their leadership steered these congregations down a preventive path that eventually led them to utilizing a reserve study to maintain their facilities.

Lay leaders are largely responsible for implementing reserve study recommendations because they populate the decision-making committees, but facilities specific staff can make a critical difference in the timely execution of projects. Regardless of building age, facilities specific staff are able to provide consistent attention to implementing reserve study recommendations that can be difficult for groups of volunteers to match. A deferred maintenance backlog began to form during a transition

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period before the facilities manager position was filled at Peachtree Presbyterian. Once
the post was occupied, the deferred maintenance was addressed, and the church caught up
with their recommendations.109 Both congregations in the historic buildings of this study
do not have full time facilities maintenance managers and have significant maintenance
backlogs to address. The First Congregational Church of Glen Ellyn hired a part-time
facilities staff person three years after their reserve study to keep on top of ongoing
projects. Despite being operated by well-intentioned lay leaders, religious organizations
housed in recent and historic buildings can both have deferred maintenance accumulate
because of the lack of staff.

The available resources of a religious organization contribute to the level of detail
of the reserve study report and the type of funding model used. The component method
was used by most of the participating congregations. All of the congregations in recent
buildings used the component method to build appropriate reserve contributions into their
annual donation drives. The First Presbyterian is the congregation in a historic building
that uses the component method. They are funding reserves for individual components
and maintenance with the assistance of their endowment, annual giving, and likely a loan.
Regardless of building age, the component method is best suited for congregations with a
limited maintenance backlog or the resources to fund individual component reserves as
well as maintenance and repairs.

Although less financially sustainable, the cash flow method is useful for
congregations with limited resources who are beginning to proactively care for their

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109 Kenny Mahan (Safety & Loss Prevention Manager at Epworth UMC) in discussion with the author,
March 4, 2019.
buildings while working to reduce their deferred project backlog. The cash flow method recommends organizations contribute a reserve amount equal to the following year’s expenses, plus a predetermined buffer amount.\textsuperscript{110} The First Congregational Church of Glen Ellyn was the only interviewee to use the cash flow method. Their funding method selection was due in part to their limited resources. Some church members are contributing towards a reserve endowment fund, but the church needs to use most of its capital campaign funds for addressing pressing deferred maintenance projects. The cash flow method is allowing the First Congregational Church of Glen Ellyn to use their capital campaign fund to cover their pressing maintenance needs while the congregation plans for and implements other capital preservation projects.

Heritage site managers should hire professionals that consider the significance and extended service lives of their components. The First Congregational Church of Glen Ellyn’s reserve format was based on a condominium reserve study, which did not incorporate the extended service lives of historic components or their proper care. For example, the reserve study recommended replacing the stained-glass windows. The church chose to restore the windows instead, which was less expensive than replacement. It is important for heritage site managers to hire professionals with preservation experience to complete their reserve studies because they understand how to identify and care for significant features. The Secretary for the Interior’s Professional Standard Qualifications provide the most guidance for hiring an experience preservation professional.

\textsuperscript{110} Peter B. Miller, “Cutting Through the Fog: Cash Flow vs Component Understanding Different Methodologies.” 7-8.
professional and may be the best tool to help heritage site managers evaluate candidates to complete a reserve study.\textsuperscript{111}

The reserve study report for First Presbyterian did take into account the historic components but did not follow the typical reserve study format. A conservation conditions assessment was formatted into a prioritized, itemized list that includes cost estimates and appropriate treatments of the historic fabric. The First Presbyterian report was also organized into three distinct phases to allow the congregation to carry out capital campaigns in anticipation of future work. Hybrid formats that incorporate the cultural significance, conditions assessments, appropriate conservation treatments of historic components, maintenance, repairs, and replacement cost estimates may be the most helpful management tools for stewards of historic buildings. Architectural conservators and other preservation specialists could help the reserve study industry adapt to historic properties.

6.4 Grounded Theory

A grounded theory is an inductive reasoning research method that is used to analyze qualitative data by identifying key trends.\textsuperscript{112} The following recommendations for the use of reserve studies by heritage site managers are based on observations from research completed for this thesis. Although these suggestions are theoretical, they could have practical implications for the use of reserve studies by heritage site managers.

\begin{footnotesize}
\begin{enumerate}
\end{enumerate}
\end{footnotesize}
Before a site manager commissions a reserve study, they should follow the first few steps of the Burra Charter: gather and record information about the place, develop a site chronology, assess the significance, and prepare a statement of significance. It is important to have archival research, baseline documentation, and a building chronology completed prior to assessing the condition of the building because foreknowledge of original construction techniques and subsequent repairs is critical to an accurate building assessment. A dedicated group of volunteers can compile these documents but a trained preservation firm could also be engaged to provide these services. After this research has been completed, a reserve study can be commissioned.

The standardized reserve study format could be used as-is by a team of professionals to assess the physical condition of a heritage site. The difference with analyzing a heritage site is the experience required to accurately assess the condition, remaining service lives, treatment recommendations, and cost estimates associated with historic components. Engaging with professionals who understand the extended services lives and care requirements of historic components will produce more accurate estimates and reduce the frequency, cost, and time required to update the reserve study.


114 The Secretary of the Interior’s Professional Qualification Standards could be useful guides to help site managers evaluate potential contractors.
The reserve study industry is geared towards commercial and residential common interest developments so it is likely that a firm contracted to complete a reserve study will not have staff trained preservation. Heritage site managers should specify that a preservation subcontractor be included in the reserve study assessment process. Including contractors who have previous experience with building components, such as HVAC servicers, in the reserve study assessment could also improve the accuracy and depth of a reserve study.

Both the cash flow and component funding methods can be effectively used to financially plan for heritage sites. The cash flow method more user-friendly for organizations with limited reserves who have a significant maintenance back log. Organizations that are short on funds with lots of pressing problems need to spend to repair their buildings while keeping up with maintenance and setting aside some money for a reserve for emergencies. The component method is more fiscally conservative and suits organizations that have a financial buffer or receive their funds through annual giving, rather than capital campaigns. After the reserve study report is completed, the heritage organization should determine which entities will be responsible for implementing the recommendations and periodically updating the reserve study. Religious organizations in this thesis divided these responsibilities into separate subcommittees that focused on building care, financial planning, and overall governance.

Reserve studies can play a pivotal role in the vitality of a faith-based community or other nonprofit housed in a historic building. Providing for and regularly carrying out maintenance and repairs allows religious organizations to diminish the physical and financial burdens of deferred maintenance. Adequately providing for the facilities while

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remaining within the resources of the congregation contributes to the overall financial stability of the religious organization. Proactively preventing problems from accruing reduces the total cost of maintenance and repairs, allowing funds to be directed towards mission-related programming and other spending priorities.
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Appendix

Appendix A: Glossary

**Capital Project**- a large project that requires funding from a capital campaign

**Cash Flow Method**- utilizes the reserve fund as an aggregate pool, set aside to cover all planned capital expenditures, maintenance, and a buffer fund.\(^\text{116}\)

**Catch up Effect**- the period that is required to return reserves back to a sufficiently funded position.\(^\text{117}\)

**Common Interest Development**- A type of property classified by common assets and facilities, provided for by a system of self-governance managed through an association.\(^\text{118}\) Includes condominiums, golf resorts, time share properties, schools, and religious organizations.

**Component Method**- The component method calculates the total reserve required to maintain, repair, and eventually replace a component. These line item reserve contributions and costs are totaled for a fundraising goal based on the assets, income, and debts of the client organization.\(^\text{119}\)

**Heritage Management Plan** includes a statement of purpose, historical description, assessment of significance, summary of current conditions, management issues, aims, management objectives, objects related to conditions, maintenance and repair recommendations, and a monitoring program.\(^\text{120}\)

**Historic Building**- over fifty years of age.\(^\text{121}\)

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\(^\text{116}\) Peter B. Miller, “Cutting Through the Fog: Cash Flow vs Component Understanding Different Methodologies.” 7-8.

\(^\text{117}\) Peter B. Miller, “Cutting Through the Fog: Cash Flow vs Component Understanding Different Methodologies.” 10.


\(^\text{119}\) Peter B. Miller, “Cutting Through the Fog: Cash Flow vs Component Understanding Different Methodologies.” 7-8.


Preventive Conservation- actions aimed at avoiding and minimizing future deterioration or loss.\textsuperscript{122}

Proportional Funding Model- like the component method except the organization plans to fund a portion, rather than the whole, reserve balance.\textsuperscript{123}

Recent Building- under fifty years of age.\textsuperscript{124}

Reserve Study- A reserve study is a facilities management report compiled from two sources of data, a physical assessment and a financial analysis of an organization.\textsuperscript{125} The physical assessment includes a component inventory, condition assessment, and life/valuation estimates.\textsuperscript{126} The financial analysis examines the monetary health of the organization to create a funding plan.


\textsuperscript{123} Ibid. 10.


\textsuperscript{125} Community Associations Institute, “National Reserve Study Standards,” 1998.

\textsuperscript{126} Community Associations Institute, “National Reserve Study Standards,” 1998.
### Appendix B: Cash Flow and Component Funding Method Examples

#### Cash Flow Method

<table>
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<th>Component Funding Year</th>
<th>Cost</th>
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<th>Year 2</th>
<th>Year 3</th>
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<td>$25</td>
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| Annual Contribution     | $125 | $125   | $125   | $125   | $125   |

| Total Reserve Study Contributions | $625 |
| 5 Year Expenditure Total | $500 |
| Reserves | $125 |

The cash flow method spends the reserve contribution annually but maintains a threshold fund to act as a buffer in the case of emergencies.

#### Component Method

<table>
<thead>
<tr>
<th>Component Funding Year</th>
<th>Cost</th>
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<th>Year 2</th>
<th>Year 3</th>
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<td>$25</td>
<td>$25</td>
<td>$25</td>
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</tbody>
</table>

| Annual Contribution    | $208 | $133   | $108   | $100   | $100   |

| Total Reserve Study Contributions | $650 |
| 5 Year Expenditure Total | $500 |
| Reserves | $150 |

The component method saves for line item component annually to ensure that there are enough reserve funds to cover the expense when it becomes scheduled.
General Information About Reserve Studies

One of the primary responsibilities of the board of directors of a community association is to protect, maintain, and enhance the assets of the association. To accomplish this objective, associations must develop multi-year plans to help them anticipate and responsibly prepare for the timely repair and replacement of common area components such as roofs, roads, mechanical equipment, and other portions of the community’s common elements.

Originally published in 1998, the National Reserve Study Standards provide a consistent set of terminology, calculations, and expectations so reserve study providers and those they serve together can build a successful future for millions of community association homeowners across the country. A reserve study is made up of two parts, the physical analysis and the financial analysis. The physical analysis includes the component inventory, condition assessment, and life and valuation estimates. The component inventory should be relatively stable from year to year, while the condition assessment and life and valuation estimate change from year to year.

The financial analysis is made up of an analysis of the client’s current reserve fund status (measured in cash or as percent funded) and a recommendation for an appropriate reserve contribution rate (a funding plan).

Physical analysis
- Component inventory
- Condition assessment
- Life and valuation estimates

Financial analysis
- Fund status
- Funding plan

Levels of Service
The following three categories describe the various types of reserve studies, from exhaustive to minimal.

I. Full. A reserve study in which the following five reserve study tasks are performed:
- Component inventory
- Condition assessment (based upon on-site visual observations)
- Life and valuation estimates
- Fund status
- Funding plan

II. Update, With Site Visit/On-Site Review. A reserve study update in which the following five reserve study tasks are performed:

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- Component inventory (verification only, not quantification)
- Condition assessment (based on on-site visual observations)
- Life and valuation estimates
- Fund status
- Funding plan

III. Update, No-Site-Visit/Off Site Review. A reserve study update with no on-site visual observations in which the following three reserve study tasks are performed:
- Life and valuation estimates
- Fund status
- Funding plan

IV. Preliminary, Community Not Yet Constructed. A reserve study prepared before construction that is generally used for budget estimates. It is based on design documents such as the architectural and engineering plans. The following three tasks are performed to prepare this type of study:
- Component inventory
- Life and valuation estimates
- Funding plan

Terms and Definitions

CAPITAL IMPROVEMENTS: Additions to the association’s common elements that previously did not exist. While these components should be added to the reserve study for future replacement, the cost of construction should not be taken from the reserve fund.

CASH FLOW METHOD: A method of developing a reserve funding plan where contributions to the reserve fund are designed to offset the variable annual expenditures from the reserve fund. Different reserve funding plans are tested against the anticipated schedule of reserve expenses until the desired funding goal is achieved.

COMPONENT: The individual line items in the reserve study developed or updated in the physical analysis. These elements form the building blocks for the reserve study. These components comprise the common elements of the community and typically are: 1. association responsibility, 2. with limited useful life expectancies, 3. predictable remaining useful life expectancies, and 4. above a minimum threshold cost. It should be noted that in certain jurisdictions there may be statutory requirements for including components or groups of components in the reserve study.

COMPONENT INVENTORY: The task of selecting and quantifying reserve components. This task can be accomplished
through on-site visual observations, review of association design and organizational documents, review of association precedents, and discussion with appropriate representative(s) of the association.

COMPONENT METHOD: A method of developing a reserve funding plan where the total contribution is based on the sum of contributions for the individual components.

CONDITION ASSESSMENT: The task of evaluating the current condition of the component based on observed or reported characteristics.

EFFECTIVE AGE: The difference between useful life and remaining useful life. Not always equivalent to chronological age, since some components age irregularly. Used primarily in computations.

FINANCIAL ANALYSIS: The portion of a reserve study where the current status of the reserves (measured as cash or percent funded) and a recommended reserve contribution rate (funding plan) are derived, and the projected reserve income and expense over a period of time are presented. The financial analysis is one of the two parts of a reserve study.

FULLY FUNDED: 100 percent funded. When the actual (or projected) reserve balance is equal to the fully funded balance.

FULLY FUNDED BALANCE (FFB): An indicator against which the actual (or projected) reserve balance can be compared. The reserve balance that is in direct proportion to the fraction of life “used up” of the current repair or replacement cost. This number is calculated for each component, and then summed for an association total.

\[ \text{FFB} = \text{Current Cost} \times \frac{\text{Effective Age}}{\text{Useful Life}} \]

Example: For a component with a $10,000 current replacement cost, a 10-year useful life and effective age of 4 years the fully funded balance would be $4,000.

FUND STATUS: The status of the reserve fund reported in terms of cash or percent funded.

FUNDING GOALS: Independent of methodology used, the following represent the basic categories of funding plan goals. They are presented in order of greatest risk to least risk. Risk includes, but is not limited to, cash problems, special assessments, and deferred maintenance.

- Baseline Funding: Establishing a reserve funding goal of allowing the reserve cash balance to never be below zero during the cash flow projection. This is the funding goal with the greatest risk due to the variabilities encountered in the timing of component replacements and repair and replacement costs.
- Threshold Funding: Establishing a reserve funding goal of keeping the reserve balance above a specified dollar or percent funded amount. Depending on the
threshold selected, this funding goal may be weaker or stronger than “Fully Funded” with respective higher risk or less risk of cash problems.

- Full Funding: Setting a reserve funding goal to attain and maintain reserves at or near 100 percent funded. This is the most conservative funding goal. It should be noted that in certain jurisdictions there may be statutory funding requirements that would dictate the minimum requirements for funding.

FUNDING PLAN: An association’s plan to provide income to a reserve fund to offset anticipated expenditures from that fund. The plan must be a minimum of twenty (20) years.

FUNDING PRINCIPLES: The reserve provider must provide a funding plan addressing these principles.

- Sufficient funds when required
- Stable contribution rate over the years
- Equitable contribution rate over the years
- Fiscally responsible

LIFE AND VALUATION ESTIMATES: The task of estimating useful life, remaining useful life, and current repair or replacement costs for the reserve components.

PERCENT FUNDED: The ratio, at a particular point in time related to the fiscal year end, of the actual (or projected) reserve balance to the fully funded balance, expressed as a percentage. While percent funded is an indicator of an association’s reserve fund size, it should be viewed in the context of how it is changing due to the association’s reserve funding plan in light of the association’s risk tolerance.

PHYSICAL ANALYSIS: The portion of the reserve study where the component inventory, condition assessment, and life and valuation estimate tasks are performed. This represents one of the two parts of the reserve study.

REMAINING USEFUL LIFE (RUL): Also referred to as “remaining life” (RL). The estimated time, in years, that a reserve component can be expected to serve its intended function. Projects expected to occur in the initial year have zero remaining useful life.

REPLACEMENT COST: The cost to replace, repair, or restore the component to its original functional condition during that particular year, including all related expenses (including but not limited to shipping, engineering and design, permits, installation, disposal, etc.).

RESERVE BALANCE: Actual or projected funds, as of a particular point in time that the association has identified, to defray the future repair or replacement cost of those major components that the association is obligated to maintain or replace. Also known as reserves, reserve accounts, cash reserves. Based on information provided and not audited.
RESERVE PROVIDER: An individual who prepares reserve studies. In many instances, the reserve provider will possess a specialized designation such as the Reserve Specialist (RS) designation provided by Community Associations Institute (CAI). This designation indicates that the provider has shown the necessary skills to perform a reserve study that conforms to these standards.

RESERVE PROVIDER FIRM: A company that prepares reserve studies as one of its primary business activities.

RESERVE STUDY: A budget planning tool which identifies the components that the association is responsible to maintain or replace, the current status of the reserve fund, and a stable and equitable funding plan to offset the anticipated future major common area expenditures. The reserve study consists of two parts: the physical analysis and the financial analysis.

RESPONSIBLE CHARGE: A Reserve Specialist (RS) in responsible charge of a reserve study shall render regular and effective supervision to those individuals performing services that directly and materially affect the quality and competence of services rendered by the Reserve Specialist. A Reserve Specialist shall maintain such records as are reasonably necessary to establish that the Reserve Specialist exercised regular and effective supervision of a reserve study of which he or she was in responsible charge. A Reserve Specialist engaged in any of the following acts or practices shall be deemed not to have rendered the regular and effective supervision required herein:

1. The regular and continuous absence from principal office premises from which professional services are rendered; except for performance of field work or presence in a field office maintained exclusively for a specific project;
2. The failure to personally inspect or review the work of subordinates where necessary and appropriate;
3. The rendering of a limited, cursory or perfunctory review of plans or projects in lieu of an appropriate detailed review; and
4. The failure to personally be available on a reasonable basis or with adequate advance notice for consultation and inspection where circumstances require personal availability.

SPECIAL ASSESSMENT: A temporary assessment levied on the members of an association in addition to regular assessments. Note that special assessments are often regulated by governing documents or local statutes.

USEFUL LIFE (UL): The estimated time, in years, that a reserve component can be expected to serve its intended function if properly constructed in its present application or installation.

Reserve Study Contents
The following is a list of the minimum contents to be included in the Reserve Study.
1. A summary of the association’s number of units, physical description and reserve fund financial condition.
2. A projection of reserve starting balance, recommended reserve contributions, projected reserve expenses, and projected ending reserve fund balance for a minimum of 20 years.
3. A tabular listing of the component inventory, component quantity or identifying descriptions, useful life, remaining useful life and current replacement cost.
4. A description of methods and objectives utilized in computing the Fund Status and development of the Funding Plan.
5. Source(s) utilized to obtain component repair or replacement cost estimates.
6. A description of the level of service by which the Reserve Study was prepared.
7. Fiscal year for which the Reserve Study is prepared.

Disclosures
The following are the minimum disclosures to be included in the Reserve Study:
1. General: Description of the other involvement(s) with the association, which could result in actual or perceived conflicts of interest.
2. Physical Analysis: Description of how thorough the on-site observations were performed: representative samplings vs, all common areas, destructive testing or not, field measurements vs. drawing take-offs, etc.
3. Financial Analysis: Description of assumptions utilized for interest and inflation, tax and other outside factors.
4. Personnel Credentials: State or organizational licenses or credentials carried by the individual responsible for Reserve Study preparation or oversight.
5. Update Reports: Disclosure of how the current work is reliant on the validity of prior Reserve Studies.
6. Completeness: Material issues which, if not disclosed, would cause a distortion of the association’s situation.
7. Reliance on Client Data: Information provided by the official representative of the association regarding financial, physical, quantity, or historical issues will be deemed reliable by the consultant and assembled for the association’s use, not for the purpose of performing an audit, quality/forensic analysis, or background checks of historical records.
8. Reserve Balance: The actual or projected total presented in the Reserve Study is based upon information provided and was not audited.
9. Component Quantities: For update with site visit and update no site visit levels of service, the client is considered to have deemed previously developed component quantities as accurate and reliable.
10. Reserve Projects: Information provided about reserve projects will be considered reliable. Any on-site inspection should not be considered a project audit or quality inspection.
## Appendix D: Results Table

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<tr>
<th></th>
<th>Epworth Rehoboth</th>
<th>Peachtree Presbyterian</th>
<th>Peninsula Temple Sholom</th>
<th>First Presbyterian Church</th>
<th>The First Congregational Church of Glen Ellyn</th>
</tr>
</thead>
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<td><strong>Location</strong></td>
<td>Rehoboth, DE</td>
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<td>Burlingame, CA</td>
<td>Philadelphia, PA</td>
<td>Glen Ellyn, IL</td>
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<td>Presbyterian</td>
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<td>Presbyterian</td>
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<td><strong>Founding Date</strong></td>
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<td>1910</td>
<td>1957</td>
<td>1698</td>
<td>1862</td>
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<td>6,000</td>
<td>675 families</td>
<td>200</td>
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<td><strong>Date of Building Construction</strong></td>
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<td>1869</td>
<td>1928</td>
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<tr>
<td><strong>Architectural Style</strong></td>
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<td>Greek Revival</td>
<td>Organic Modern</td>
<td>Gothic Revival</td>
<td>Italianate Gothic Revival</td>
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<tr>
<td><strong>Square Footage</strong></td>
<td>48000</td>
<td>450,000 sq. ft. of interior space on 16 acres</td>
<td>171,229 sq. ft.</td>
<td>15,301 sq. ft.</td>
<td>25,650 sq. ft.</td>
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<td>Regular capital campaigns</td>
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<td>Component</td>
<td>Component</td>
<td>Component</td>
<td>Component</td>
<td>Cash Flow</td>
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<tr>
<td><strong>Interviewee(s)</strong></td>
<td>Kenny Mahan, Communications &amp; Technologies Manager, Inviting All Program Leader, Safety &amp; Loss Prevention Manager</td>
<td>Charles Hodnett, Facilities Director</td>
<td>Karen Wisialowski, Chief Community Officer</td>
<td>Susan, office administrator</td>
<td>Ted Harman and Andy Ginger members of the Administration and Property Committee</td>
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<tr>
<td><strong>Number of Staff</strong></td>
<td>13</td>
<td>90</td>
<td>16</td>
<td>8</td>
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<td><strong>Number of Building Specific Staff</strong></td>
<td>2</td>
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