ASSESSMENT OF THE CHURCH OF THE ADVENT CEMETERY, SPARTANBURG, SOUTH CAROLINA

Chicora Research Contribution 571

ASSESSMENT OF THE CHURCH OF THE ADVENT CEMETERY, SPARTANBURG, SOUTH CAROLINA

Research Contribution 571

Michael Trinkley
Debi Hacker

Chicora Foundation, Inc.
PO Box 8664 ▪ 861 Arbutus Drive
Columbia, SC 29202-8664
803/787-6910
www.chicora.org

August 2016

The paper in this book meets the guidelines for permanence and durability of the Committee on Production Guidelines for Book Longevity of the Council on Library Resources.∞

MANAGEMENT SUMMARY

The study examines the Episcopal Church of the Advent Cemetery in Spartanburg, South Carolina at the request of the Church Archives Committee.

The history of the cemetery is not as well-known as might be imagined. Construction on the church was begun in 1850, although the first burial occurred about 1849. The current church was consecrated in 1864, but has been expanded on numerous occasions. It is likely that at least some of the expansions have covered graves.

A cemetery assessment is designed to help the cemetery caregivers to think about long-range preservation in a structured way, to better understand what is significant and why, and how it should be managed in order to preserve its historical significance and ensure the cemetery's preservation for future generations. Issues of access, pathways, security, landscape maintenance, and monuments are examined. Current conditions are detailed and recommendations are offered.

This assessment found that in spite of the cemetery's age and that it hasn't always been high on the list of priorities, it is generally in good condition. Moreover, the current Church Archives Committee is very dedicated to the cemetery and is a fortunate constituency for its care and preservation. Perhaps most importantly, the church wisely set aside funds for the care of the cemetery.

The cemetery landscape requires the most urgent attention. Current maintenance activities are inadequate and improvement in overall care should be very high on the list of priorities. This includes renovation of turf areas, mulching areas in deep shade, pruning all of the trees, pruning all of the shrubbery and removing weedy growth in the shrubs, and overall garden improvements.

In addition, we found that the church had neglected the most basic of administrative issues, including regulatory signage, rules and regulations regarding use, burials, and monuments. Updating these rules and regulations must therefore also be considered a critical and immediate need. The recommended changes, and in many cases even the wording, is included in this document.

Although the stones experiencing "iron jacking" require attention in the next three to five years, and many of the stones could benefit from resetting or even cleaning, most of the stones in the cemetery are in stable condition.

TABLE OF CONTENTS

List of Figures v

List of Tables vi

Introduction 1
- *The Project* 2
- *A Brief History of the Cemetery* 3
- *Why Preserve?* 16
- *Preservation Fundamentals* 17
- *The Cemetery Location, Setting, and Context* 19
- *Factors Affecting Landscape Character* 22
- *Administrative Issues* 23
- *Recommendations* 24

Roads and Pedestrian Issues 25
- *Vehicle Access* 25
- *Pedestrian Access, Pathways, and Sidewalks* 25
- *Universal Access* 28
- *Recommendations* 28

Cemetery Boundary Wall 31
- *Recommendations* 33

Cemetery Security 35
- *Vandalism* 35
- *Vandalism Records* 39
- *Theft* 39
- *Dealing with the Homeless* 39
- *Recommendations* 40

Cemetery Fixtures and Furnishings 41
- *Amenities* 41
- *Introduction of Additional Memorials* 43
- *Recommendations* 43

Landscape Issues 45
- *Job Oversight* 45
- *Contractor Qualifications* 47
- *Contractor Dress and Behavior* 47
- *Cemetery Soil* 48
- *Turf* 50
- *Shrubs* 54
- *Cemetery Trees* 57
- *Recommendations* 65

Other Maintenance Issues 67
Signage 67
Flowers and Other Grave Decorations 69
Trash and Debris 69
Lost and Orphan Stones 70
Quality of the 1999 Todd Map 71
Drainage 71
Grave Opening and Closing Issues 72
Setting Monuments 73
Memory Garden and Scattering Garden 75
Recommendations 75

Conservation Issues 77
Standards for Conservation Work 77
Responsibility of the Church 78
General Types of Stone Damage 79
Plot Fence 83
Recommendations 83

Priorities 85
Recommended Priorities 85

Sources Cited 93

LIST OF FIGURES

Figure

1. Spartanburg County, South Carolina and the location of the Church of the Advent 1
2. Aerial photograph of the Church and cemetery 2
3. Church lot in the late nineteenth century 4
4. Photograph of the church and surrounding cemetery about 1893 5
5. Photograph of the church and surrounding cemetery about 1893 6
6. Photograph dating from 1909 7
7. Photograph dating from 1910 8
8. Sanborn Insurance Maps showing the Church in 1912 and 1923 9
9. Image of the church dating prior to 1915 10
10. Image of the church about 1937 11
11. Expansion of the church over time 12
12. Reproduction of the Gooch and Taylor plan of the cemetery 13
13. Plan of the cemetery prepared by Todd in 1999. 14
14. Spartanburg zoning map showing the location of the cemetery 19
15. Census Tract 212 showing the cemetery location 20
16. Crimes within ½-mile of the cemetery over the past 30 days 22
17. Statewide drought index 22
18. Plant Hardiness Zone for the Spartanburg County area 23
19. Concrete sidewalks in the cemetery 26
20. Poorly maintained paver pathways 27
21. Front entrance steps 28
22. Stone wall along the eastern edge of the cemetery 32
23. Clothing found in the cemetery 35
24. Example of vandalism report 38
25. Example of a gate protected with stainless steel cabling 39
26. Examples of various amenities in the cemetery 42
27. Brief landscape maintenance report 45
28. Form that can be used by church as an independent evaluation 46
29. Soil sample results 49
30. Grass not mowed and covering monuments 50
31. Proper mowing height 51
32. Build-up of dead grass in the turf 51
33. Maintenance calendar for centipede grass 52
34. Soil and turf problems 53
35. Shrubbery problems 55
36. Example of inappropriate mulch covering a monument 60
37. Tree pruning issues 62
38. Tree problems 63
39. Plot covered in concrete 65
40. Recommended front and rear path regulatory signage for the cemetery 68
41. Orphan stones 70
42. Drain in the cemetery 72
43. Proper setting of a monument 73
44. Condition of the existing “memory garden” 75

45. Examples of previous repairs 78
46. Examples of stones requiring conservation treatment 80
47. Example of heavy lichen growth 83

LIST OF TABLES

Table

1. Secretary of the Interior's Standards for Preservation 18
2. Certified Landscape Contractors in the Greenville-Spartanburg area 47
3. Recommended liming and fertilization 50
4. Comparison of historically appropriate trees 59
5. ISA Certified Arborists within 25 miles of the Church 61
6. Monument problems in the cemetery 79
7. Comparison of different cleaning techniques 82
8. Prioritization of recommendations 87

Introduction

This study examines the Church of the Advent Cemetery, the first Episcopal Church cemetery in Spartanburg County. The church was begun in 1851 and consecrated in 1861, with the first burial documented in church records being that of John Blassingame Elford, taking place in 1852 (Edmunds 1998:319). A survey of the stones, however, reveals that at least one burial, that of Benjamin Hart McCollough, took place in 1849. This would date to a pre-existing frame church on this site.

The church and cemetery are situated on TMS 7-12-11-119, a 2.67 acre parcel on the northeast corner of Advent and E. Kennedy streets on the east edge of Spartanburg.

The church has undergone numerous expansions over the years and the core property was listed on the National Register of Historic Places in 2000. Today, the cemetery has approximately 207 burials based on the Gooch and Taylor map of 1946. The 1999 Todd survey identifies approximately 307 burials in the cemetery. It seems likely that a great many additional burials are present in the churchyard and some burials may have been covered by various hardscape features.

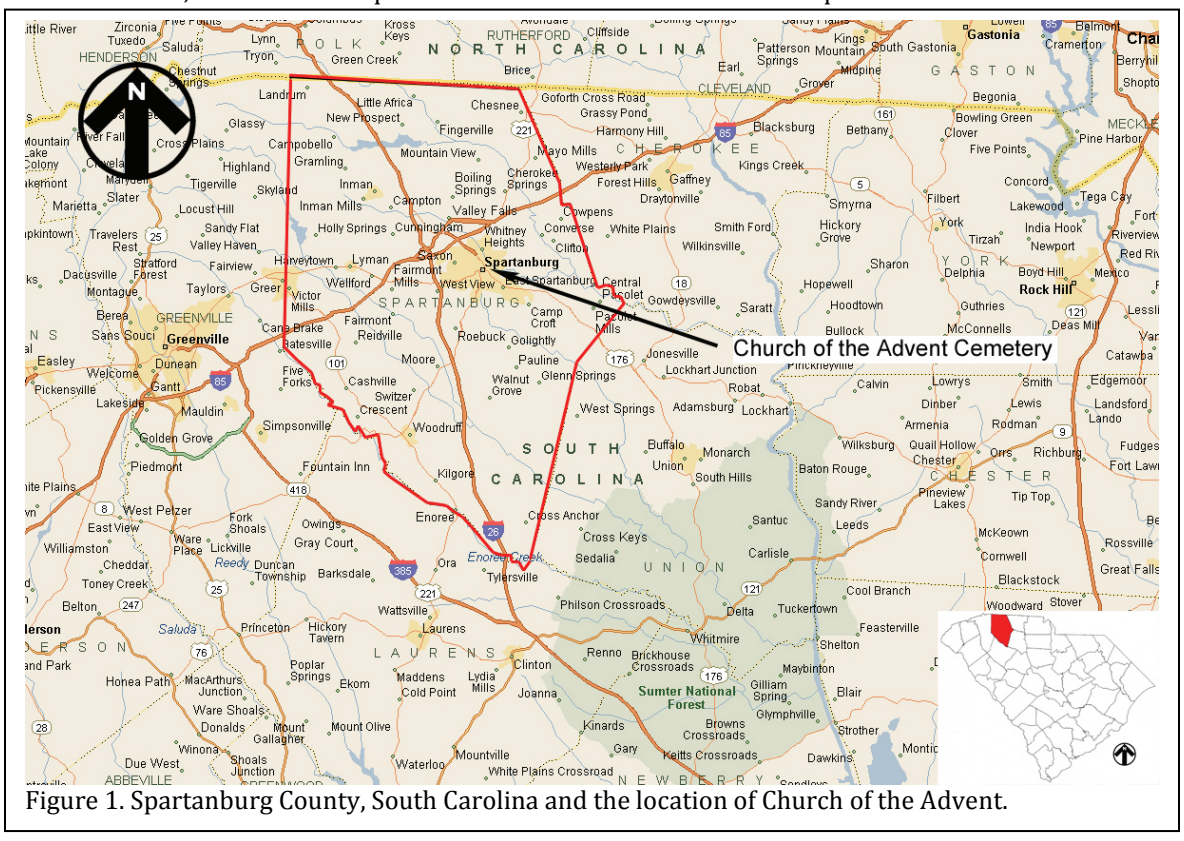


Figure 1. Spartanburg County, South Carolina and the location of Church of the Advent.

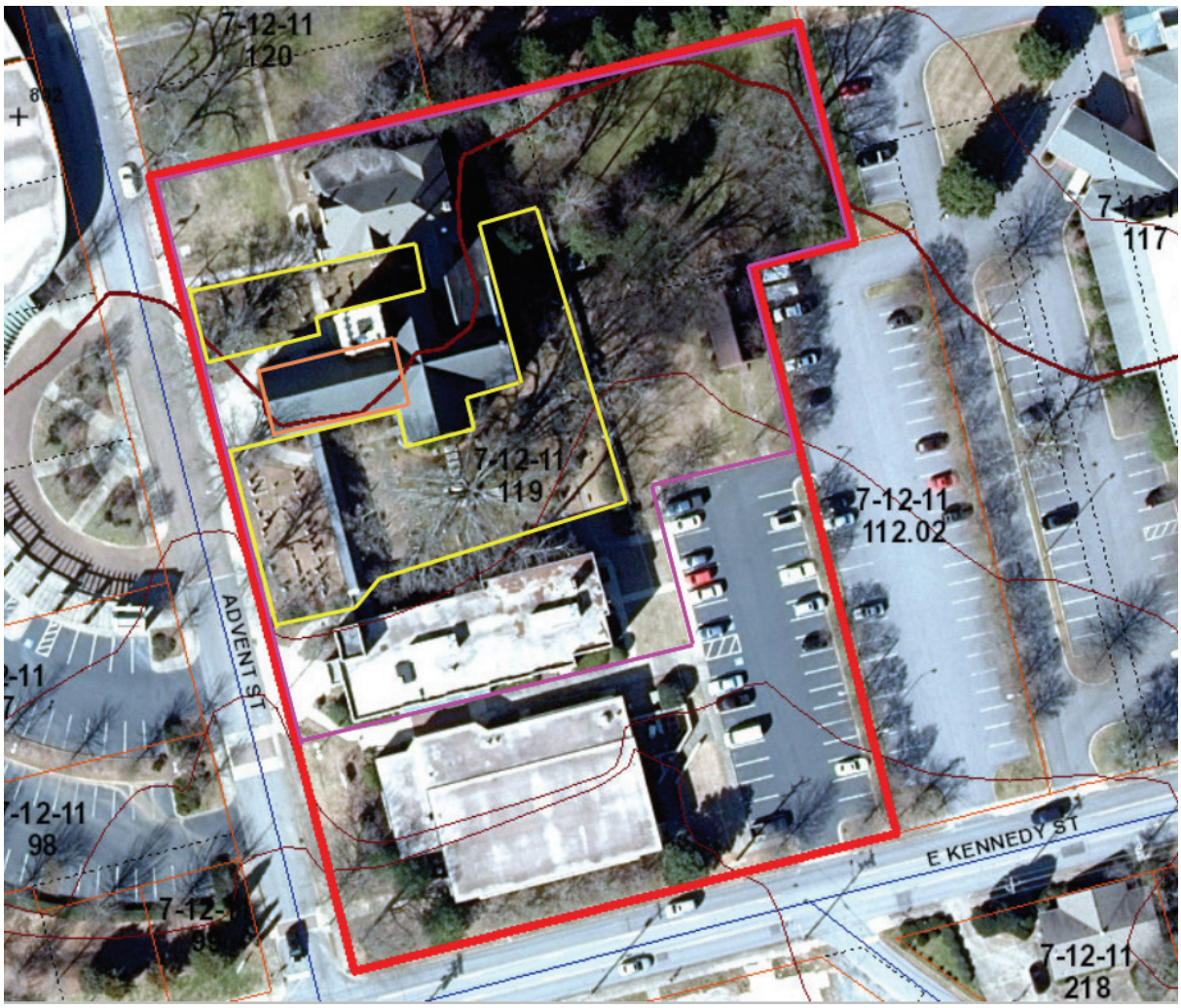


Figure 2. Aerial photograph of the Church of the Advent. The red line shows the limits of TMS 7-12-11-119; the purple line shows the National Register boundaries; the tan line shows the original church building; and the yellow lines show the existing cemeteries.

The Project

Chicora Foundation was contacted by the (Church of the Advent Archives Committee in May 2016 seeking information on the goals, procedures, and costs of a cemetery assessment for the church. An agreement was reached in early June and the Committee forwarded information to the author.

The assessment was conducted on July 27, 2016 by the author, Dr. Michael Trinkley, and Ms. Debi Hacker. The work involved an on-site meeting with the Advent Archives Committee and a variety of other interested parties from the church, as well as surrounding organizations. There was a brief orientation at the cemetery itself and afterwards the work included a more careful inspection of the overall condition.

This document may be viewed as a "comprehensive or master plan" in so far as it is a long-range plan that provides a policy framework to guide preservation planning decisions. We view

long-range as ideally five years, believing that after that length of time, progress should be evaluated and needs of the cemetery re-assessed. This document is not, however, a business, financial, or fundraising plan, although each of those topics impacts preservation and will be at least briefly examined.

This preservation plan incorporates issues of not only maintenance of the landscape, but also security, pedestrian and vehicular access, vandalism, and a review of critical conservation issues associated with monuments and graves.

The presence of a plan, however, does not guarantee improvement. This document is a "road-map" for preservation issues, but it is incumbent on those responsible for the cemetery at the Church to not simply implement its recommendations, but to embrace them. All of the recommendations will require funding from the Church of the Advent; moreover, a long-term commitment is essential to ensure that progress is maintained.

A Brief History of the Cemetery

This assessment was not tasked with conducting any detailed historical research and these discussions are limited to brief overviews of readily accessible information and recommendations for future research.

There are three readily available histories of the church and its cemetery, including the National Register nomination prepared in 2000, Edmunds (1998) and Bainbridge (2001). In addition, there are two maps of the cemetery, one prepared (or updated) in 1946 (the Gooch and Taylor map) and another prepared by George C. Todd III in 1999.

Both the National Register nomination and Edmunds (1998:6) agree that land for the church was donated by Major J.E. Henry and construction was begun in 1850, but the contractor, who is otherwise unidentified, "left" or "departed never to return." The partially constructed building was razed and a wood building was erected "on the southeastern side of the church's lot" that was described as "small, but neat" (Edmunds 1998:6-7). By December 1851 a new foundation was laid by William Hunter.

The church cemetery was, however, an immediate problem. In addition to the poor quality of much of the construction, the heirs of Major Henry sued for return of the property claiming that the gift was invalid since the land was not being used in accordance with the deed stipulations. Henry desired a church in the neighborhood, not a cemetery and as early as 1849 (prior to the deed) a burial took place, with others apparently following in quick succession. Apparently the deed specified that the property was "never to be used as a burial ground by said church for the purposes of interment and if so used . . . then this deed is to be absolutely void" (quoted in Edmunds 1998:9). For reasons that are not explained, this provision was ignored by the Vestry and the Church was able to keep the property only by Henry's heirs eventually dropping the suit in 1857. Nevertheless, construction issues continued to plague the church (Edmunds 1998:10-12).

The church was apparently completed sufficiently for its consecration in 1864, but financial troubles continued. In order to settle one mortgage on the property and building, the Vestry took a loan from another source, the proverbial "robbing Peter to pay Paul" (Edmunds 1998:14).

In 1877 the Church established a cemetery committee "to investigate into matters connected with the cemetery . . . and have a plat made . . . and adopt such rules and regulations as may be necessary" (Edmunds 1998:19). Edmunds, however, failed to follow-up on these critical issues, so it is not clear if a plat was prepared or if rules for the use of the cemetery were established.

In 1883 the Vestry again decided to "examine the cemetery of the church and have said laid out in suitable lots" (Edmunds 1998:23). This implies, but does not prove, that the earlier instructions for a plat and regulations went

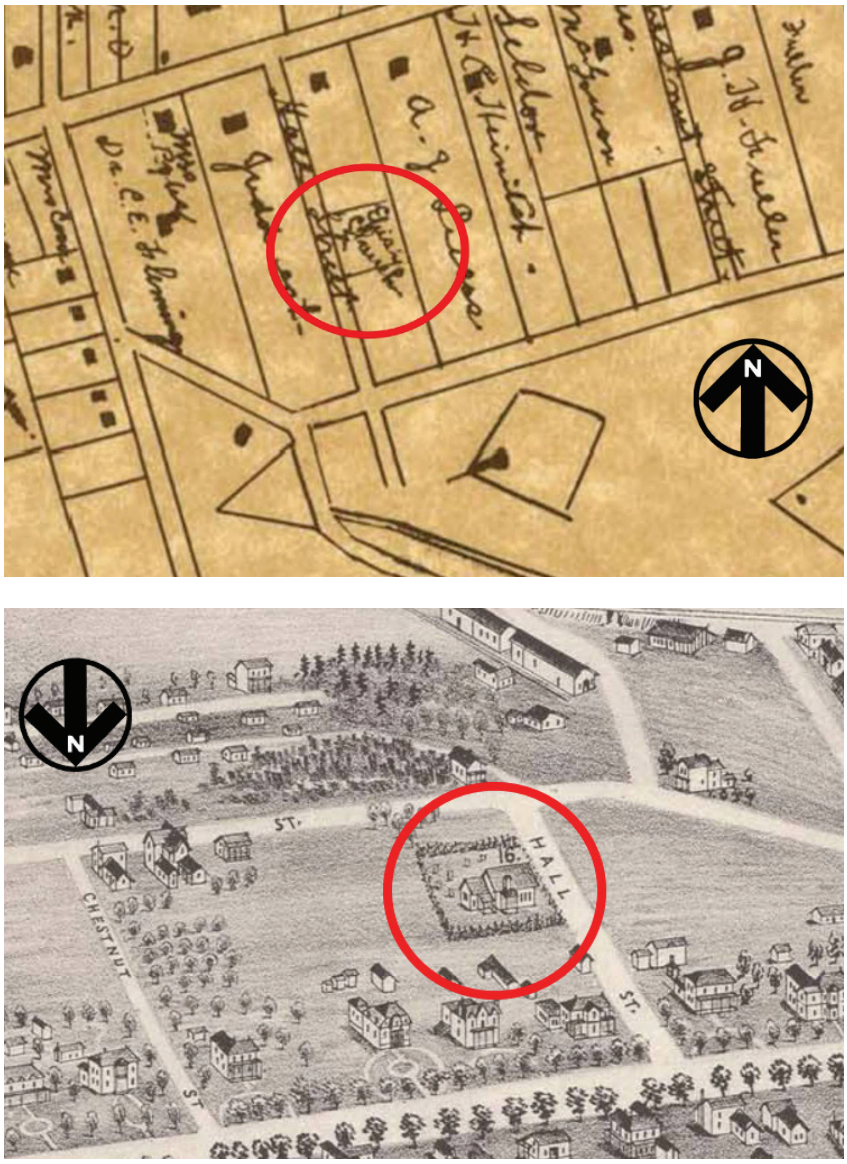


Figure 3. Church lot in the late nineteenth century. At the top is the 1882 map of Spartanburg showing the church property. Below is the 1891 Birds Eye View of Spartanburg which shows both the church building and the cemetery to the south and east.

unheeded. Regardless, in June 1883 the Vestry "met in the churchyard to witness the laying out of burial plots and the planning of walkways and other improvements to the churchyard" (Edmunds 1998:23), although no details are provided. It is reported that by late 1883, the price of burial plots was set at 12½¢ a square foot, although many were apparently given without cost. Edmunds reports that the first sale was to H.H. Thomson for $40, suggesting a plot 320 square feet in size (Edmunds 1998:24). Today, the Thomson plot, on the far eastern side of the cemetery measures approximately 297 square feet, suggesting some portion of the property has been taken over by adjacent walkways.

In 1884, a standing committee for the cemetery was established.

In late 1889, the churchyard was enlarged with the "purchase of a large lot adjacent to and south of the church" (Edmunds 1998:31). As a result, the Church also hired a sexton for $8 a month. The 1891 Bird's Eye View of Spartanburg shows some sort of fence or hedge around the cemetery (Figure 3).

Two photographs thought to date about 1894 show portions of the cemetery on the south side of the church. In one, what may be a wood picket fence is shown at the front (west) of the property. More definitively, the photos show a series of narrow dirt pathways through the cemetery, essentially defining individual plots. A curved path, perhaps three or four feet wide is also present from the front of the church through the cemetery. Little evidence of coping can be seen, although at least one plot was curbed and one iron plot fence is clearly visible.

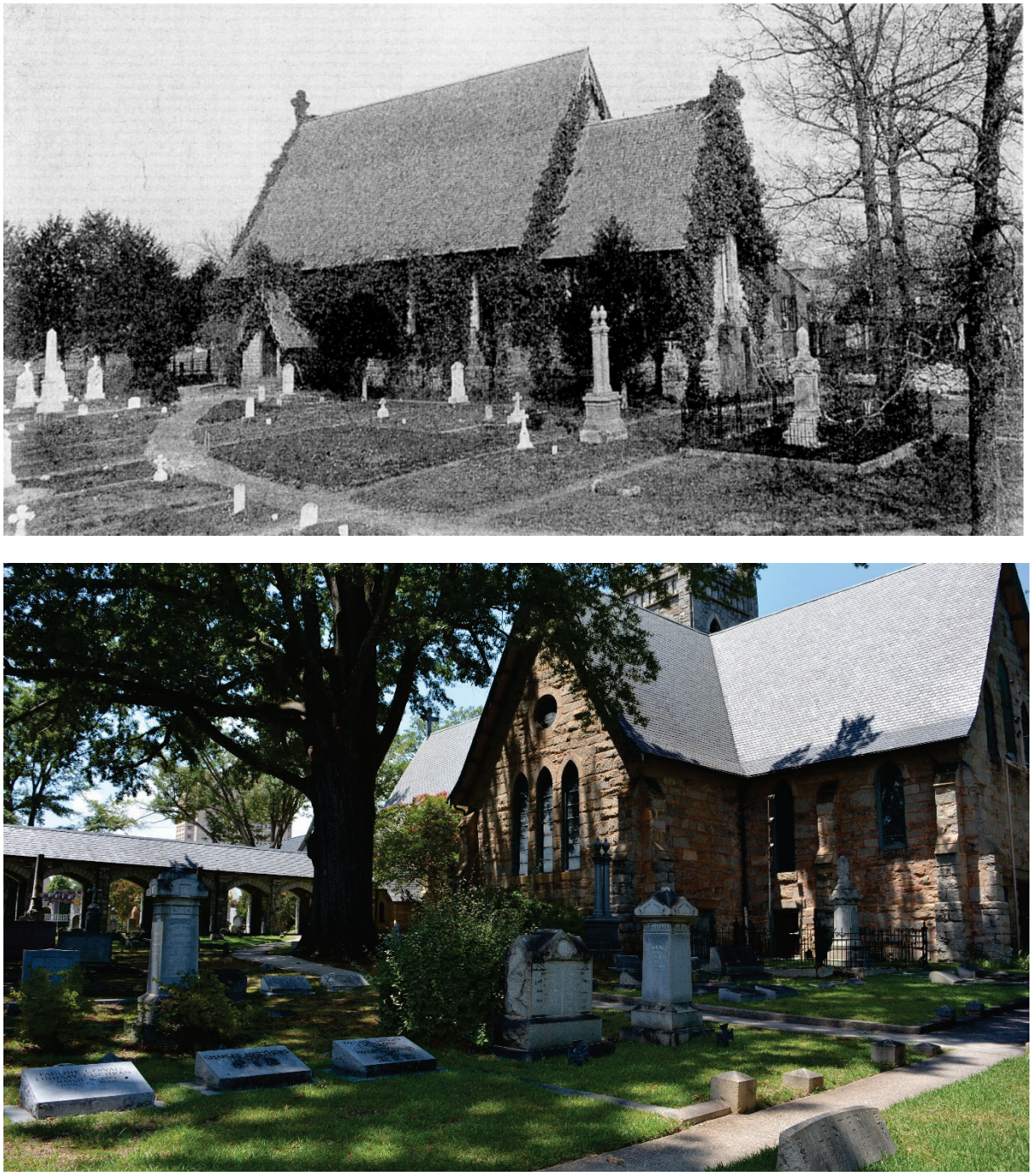


Figure 4. Photograph of the church and surrounding cemetery about 1893, prior to the first modifications in 1897 at top. This photo is looking northwest from the southeast corner of the cemetery. Below is the same view today.

Figure 5. Photographs of the church and surrounding cemetery about 1893, prior to the first modifications in 1897 at top. This photo is looking north at the James Geddes plot (the obelisk far left is on the John Geddes plot). Below is the same view today.

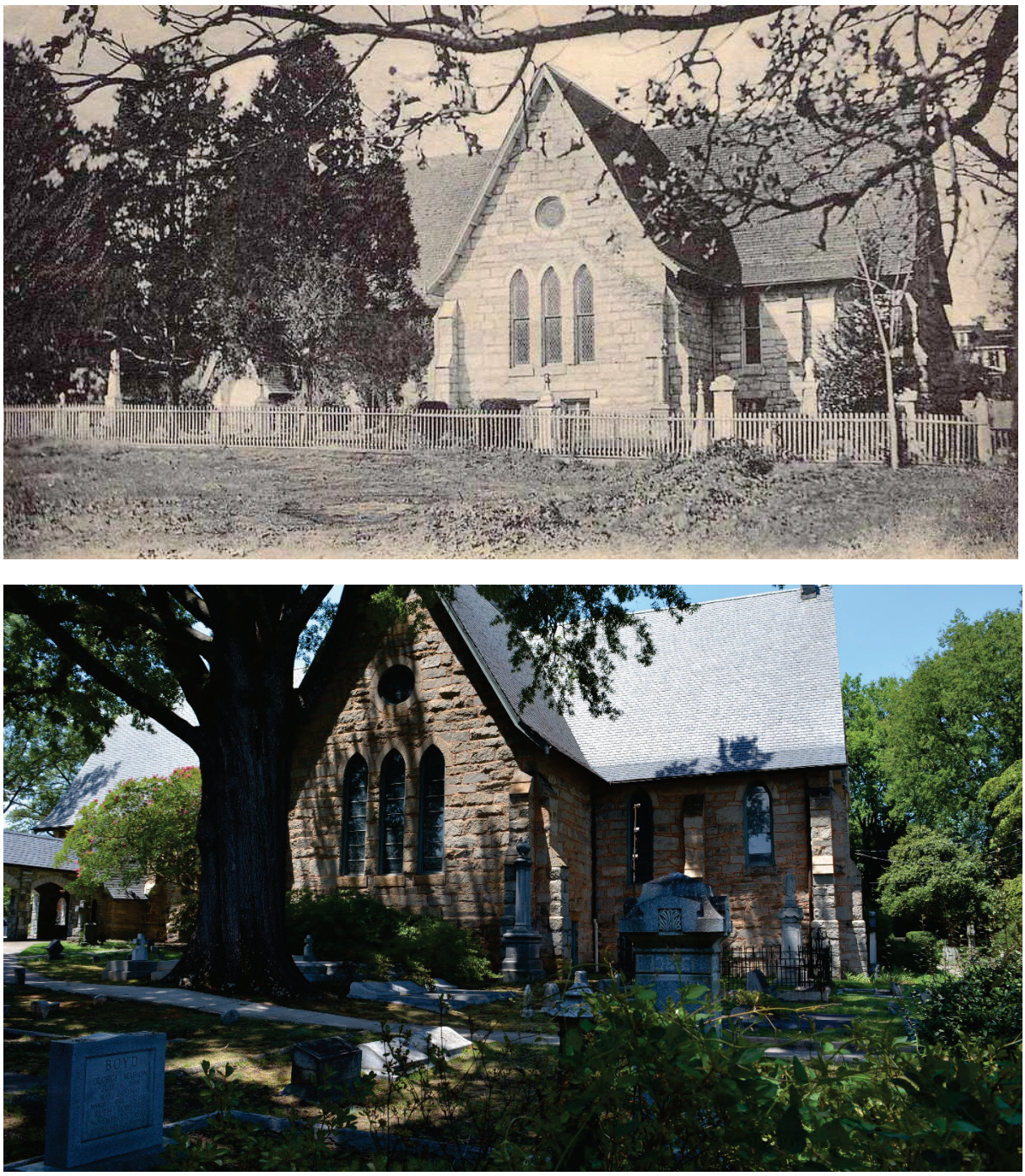


Figure 6. Photo dating from1909 taken from the south of the cemetery, looking north. This postdates the 1897 addition to the rear of the church building and shows a wood picket fence along the south edge of the churchyard and cemetery. Below is the same view today.

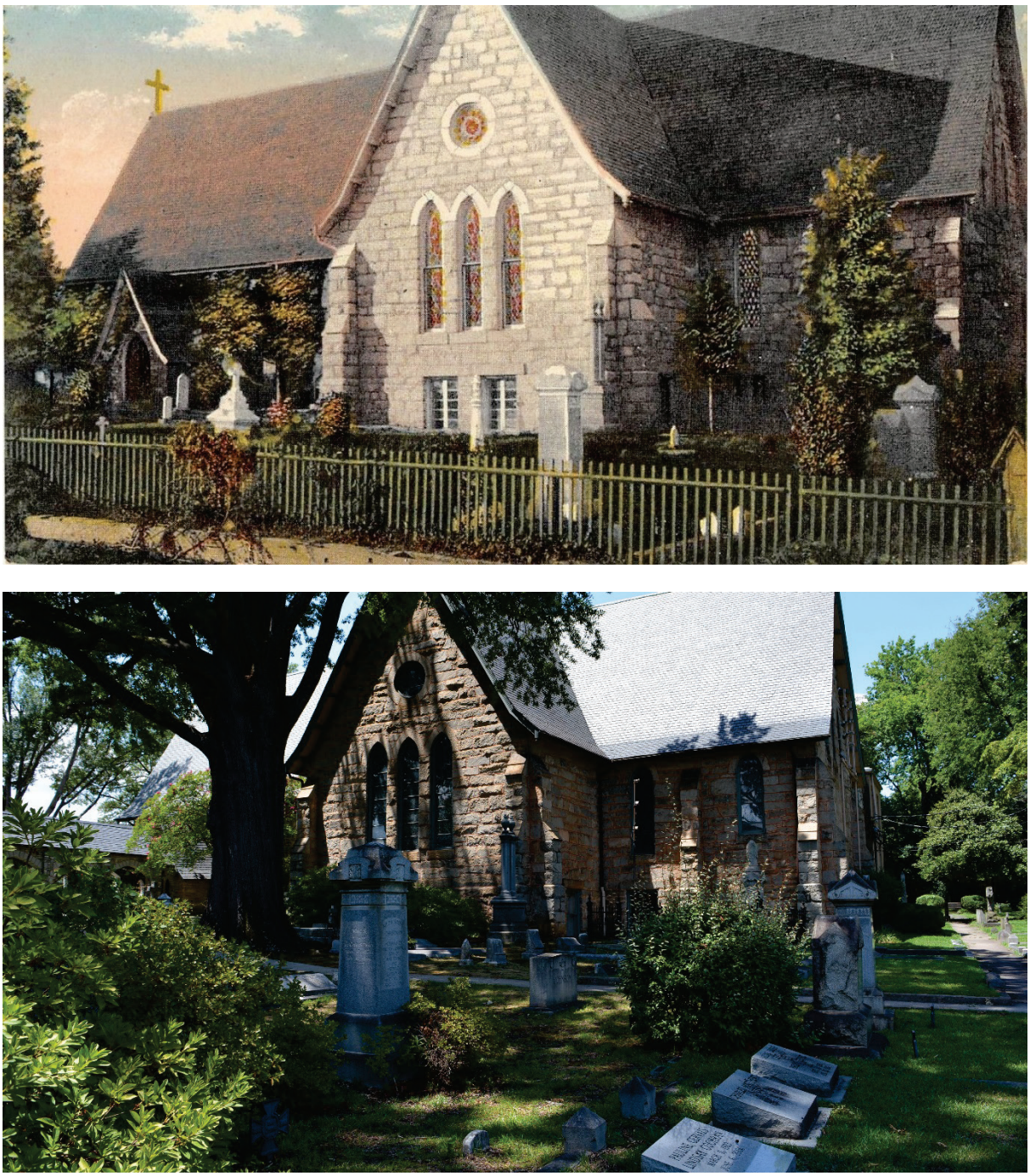


Figure 7. Photo dating from 1910, taken from the south of the cemetery, looking north. This postdates the 1897 addition to the rear of the church building and shows a wood picket fence along the south edge of the churchyard and cemetery. Below is the same view today.

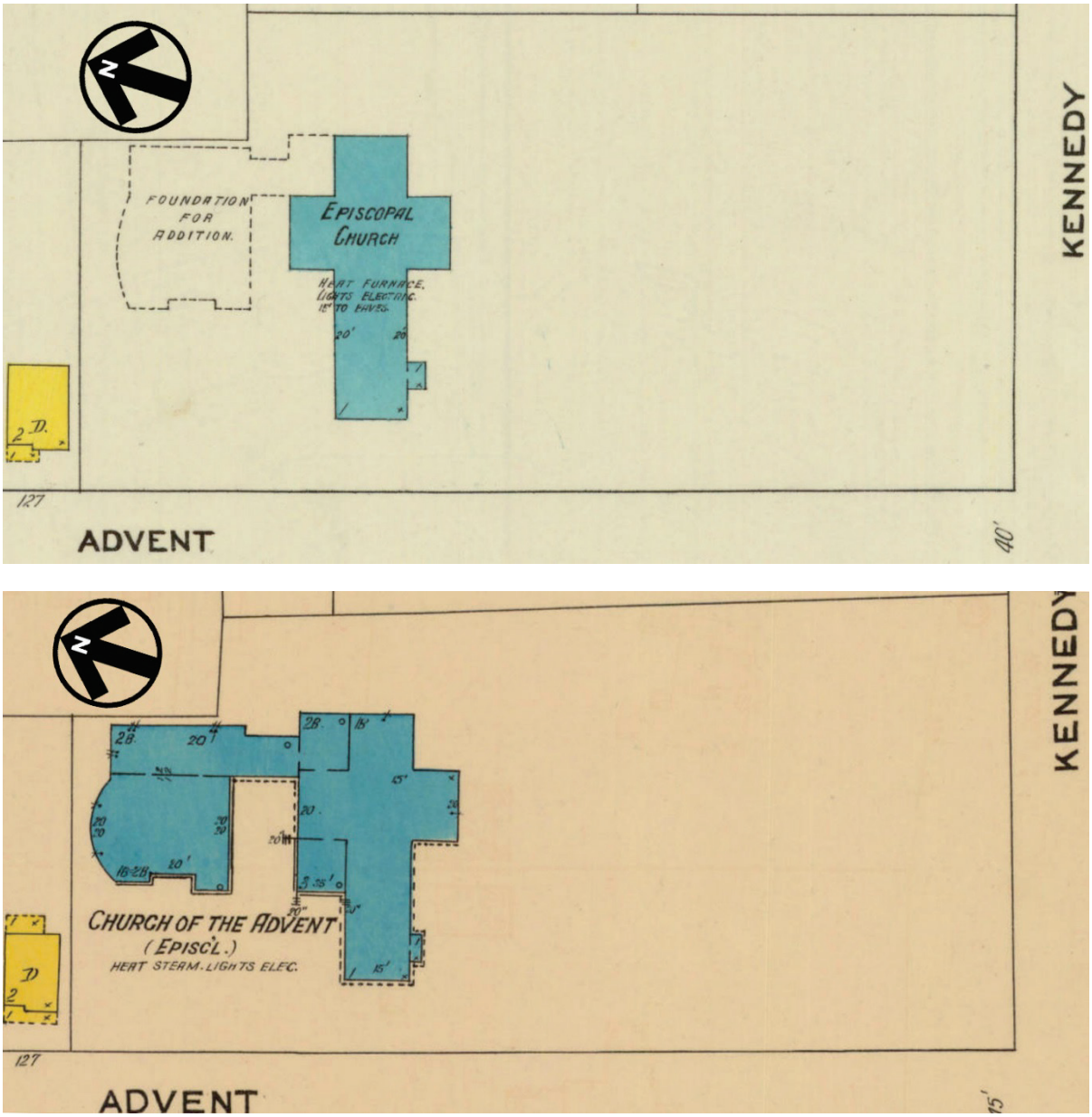


Figure 8. Sanborn Insurance Maps showing the Church in1912 and 1923. These show the original church core and its 1897 addition to the east. They also reveal the initial construction of the northern addition. Unfortunately, they provide no information regarding the wood picket fence to the south or any stone wall to the east.

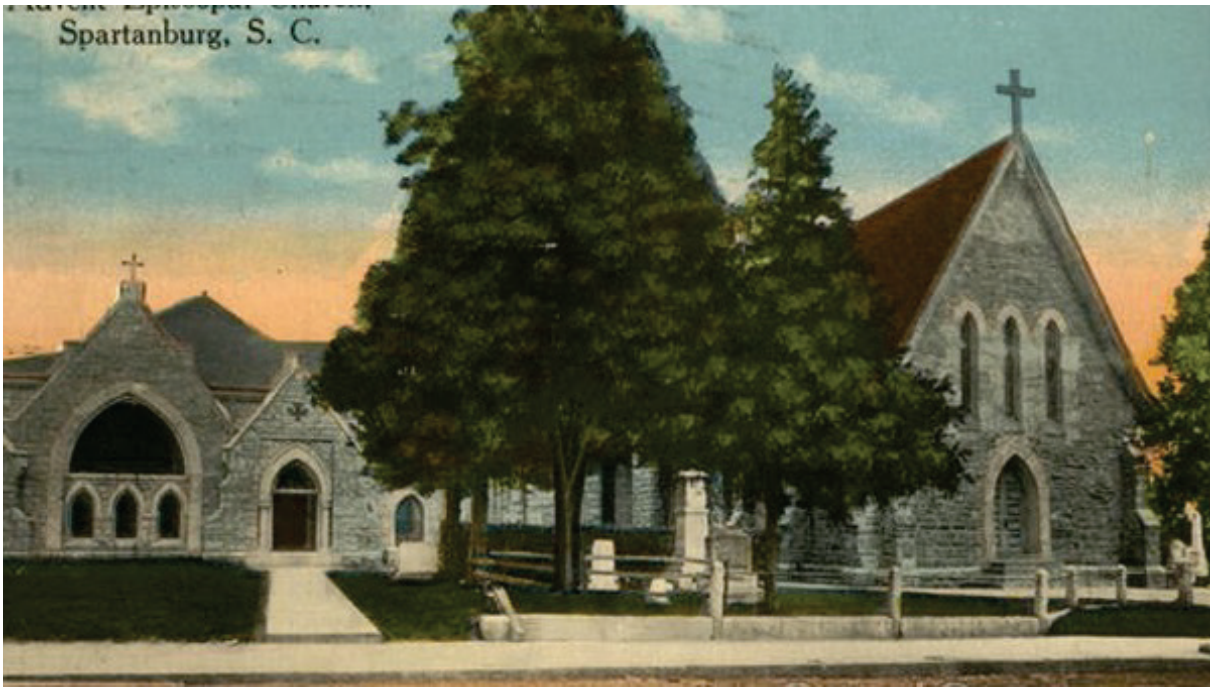


Figure 9. Image of the church dating prior to 1915, failing to show the bell tower, constructed in 1915, but does reveal what appears to be a granite and pipe rail fence along Advent (formerly Hall) Street. This fence is not shown by 1937. Below is the same view today.

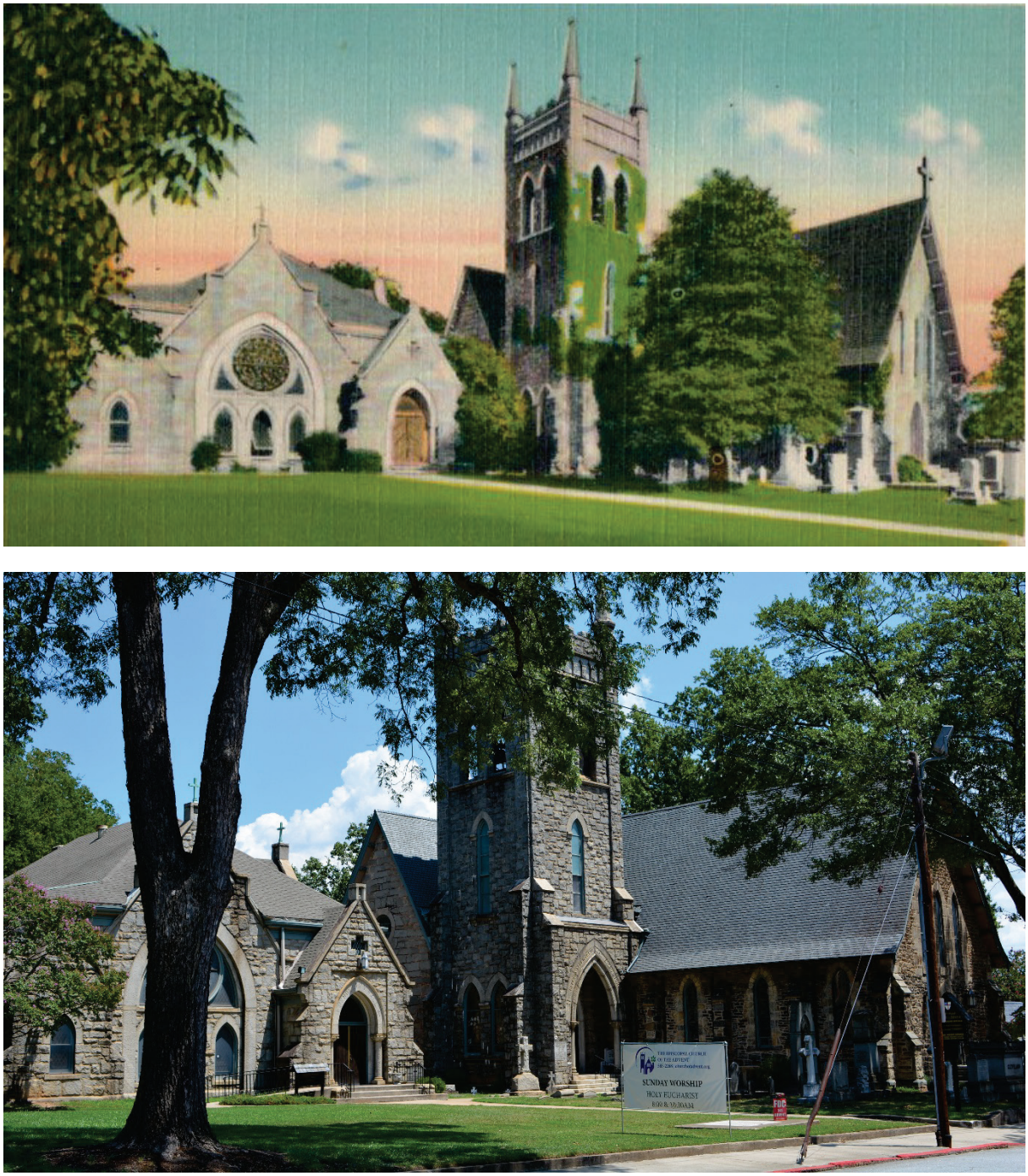


Figure 10. Image of the church about 1937. The pipe rail fence shown earlier is not present in this photo. Below is the same view today.

About 1894 there was a push to expand the church and "as this would limit the amount of space in the cemetery, the Vestry closed it to those who were not members of the Advent and began to discuss the possibility of obtaining land behind the church" (Edmunds 1998:33). By 1897 expansion of the church was underway and the "new church" was consecrated in 1899 (Edmunds 1998:35). In 1903 land north of the Church was acquired and it was this property that the parish house – Pendleton Hall – was eventually constructed (Edmunds 1998:37). In 1909, water oaks were planted in the churchyard as part of a beautification project (Edmunds 1998:42), although it is uncertain if this included the cemetery. In 1915 the Church bell tower was constructed (Edmunds 1998:47).

In 1921 the issue of the cemetery is again reported by Edmunds (1998:59), who notes that yet another survey of burial lots would be undertaken and a new plat prepared. It is apparently this survey that evolved into the Gooch and Taylor survey of 1946. It would, nevertheless, be useful to see the original 1921 survey by H. Stribling in order to better understand land use and changes in the churchyard.

In an effort to ensure its tax exempt status, the Church established tennis and basketball courts "east of the church cemetery" in 1922 (Edmunds 1998:60). Edmunds also alludes to problems in the cemetery, with the efforts by Arthur Cleveland to purchase a portion of the Joseph Elford burial plot (Edmunds 1998:65). Describing the issue as a "vexing problem," suggests that the Vestry may never have established any reasonable rules and regulations for the cemetery it was operating.

Edmunds (1998:80) remarks that in 1940 the Church constructed "an addition on the back of church" "above several graves on the back side of the church." No further information is provided regarding the number of graves, the names of those buried in that location, or whether the graves and/or the stones were moved. We have been unable to find out much about this addition, which does not appear in Figure 11. This figure does identify a cemetery wall, supposedly dating from 1860. Unfortunately, the National Register nomination provides no support for this and we haven't found a reference in Edmunds.

In 1942 the Vestry apparently closed the cemetery, noting that "there was no available space and that none could be lawfully sold" although the motivation for this announcement is not clear (Edmunds 1998:84).

Edmunds makes no mention of the revisions to the Stribling map by Gooch and Taylor in 1946, but does note that the cedars in the cemetery were dying and it was suggested that additional water oaks be planted (Edmunds 1998:90). Whether this was acted upon is not reported. By 1950, however, "the churchyard was

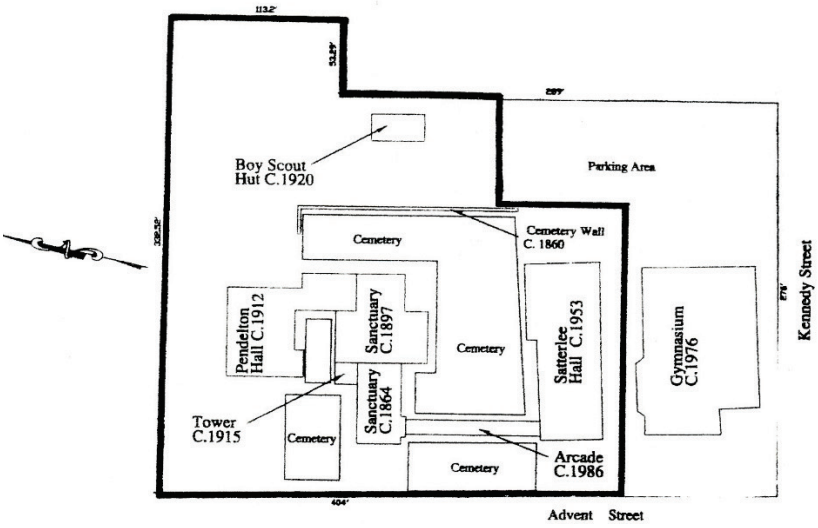


Figure 11. Expansion of the church over time (Church of the Advent National Register of Historic Preservation nomination).

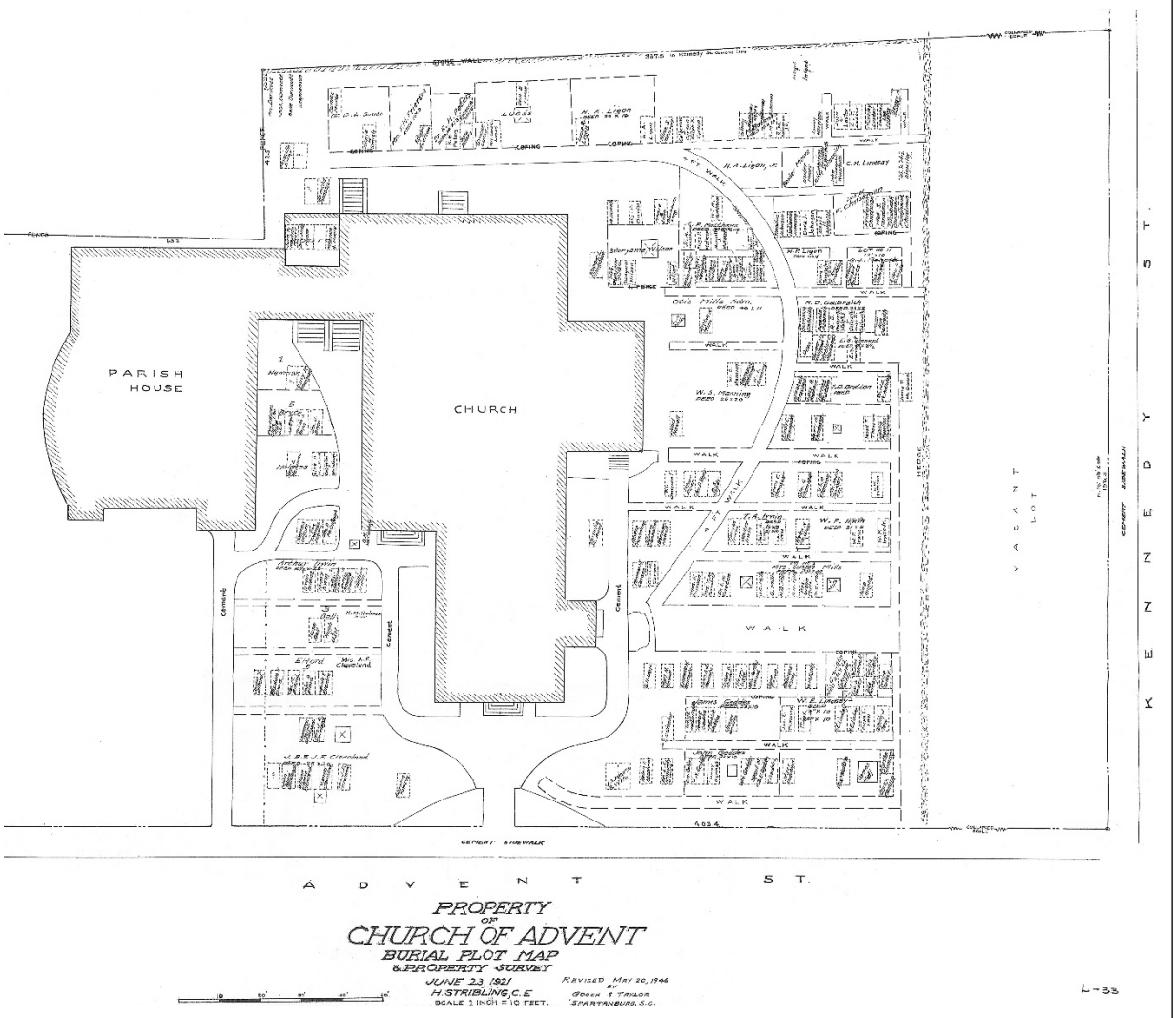


Figure 12. Reproduction of the Gooch and Taylor plan of the cemetery.

in a terrible state, with broken headstones, dead trees, and no uniform plan of care or maintenance (begging the question of whether the sexton's position, created in 1889, was still active). Apparently, the Vestry requested Archibald Walker, Mary Phifer, and Sarah Butler, "recognized experts in planting" to plan landscaping efforts. These efforts were apparently instituted in the spring of 1950. Edmunds (198:98) reports that soil was added "to build up the front of the church" and the cemetery "was put in condition to make maintenance easier." What this means, precisely, is not explained, although there was a growing movement nationwide to remove ironwork, coping, and other impediments to convenient mowing.

By 1961 it was reported that, "there was little in the way of records concerning the cemetery" and R.E. Brown and Charles Lindsey "were appointed to look into the status of graveyard plots, records, deeds, and other documents," although Edmunds (1998:113) fails to report any outcome of this concern.

In 1964 Edmunds reports that once again the Vestry concerned itself with who would be sold cemetery lots, in spite of the 1942 closure (Edmunds 1998:120). Apparently, at some time between 1942 and 1964 "a very high price" had been established, but this did not deter interest. While some suggested an expansion of the cemetery, the Vestry, once again, elected to "close" the cemetery (Edmunds 1998:121).

The next event reported by Edmunds that affected the cemetery was the construction of a cloister in 1986 which "included niches for the placement of ashes (Edmunds 1998:170). Apparently plans for the sale of niches were still being developed the following year (Edmunds 1998:172).

In 1999, George C. Todd, III conducted an Eagle Scout project at the church, providing a map and listing of the graves. Shown as Figure 13, this plan does show one burial – that of Richard Lewis Thomson - under the church.

This brief overview should reveal that the Edmunds book is largely social history and although there are 70 pages in the index, there is no listing for "cemetery," "graveyard," "burial," or even "churchyard." Clearly the cemetery was a minor consideration in the historical account. To further complicate matters, Edmunds does not footnote or document any of his observations, making it difficult to delve further into specific issues.

Edmunds does note two attempts to gather archival records. The first was by Conrad Cleveland in 1979, although apparently records stored at Spartan Mills had been lost (Edmunds 1998:148). The next effort appears to have occurred in 1982 when Bobby Browne again sought to search for missing records. He recommended that the records "be organized and kept in a safe location, and that a list of these be created." Edmunds remarks that, at least by 1998, this had not been done (Edmunds 1998:160). While very brief comments, these do suggest that many of the questions raised in this history may not be readily addressed.

Regardless, future historic efforts should be focused exclusively on the cemetery with the primary questions including:

- Better documentation of the original deed and the resulting law suit regarding the use of the church grounds for a cemetery;
- Detailed exploration of any accounts or minutes associated with the various cemetery committees, which were organized by at least 1877, again in 1883, with a standing committee organized by 1884;
- An effort to identify all cemetery plats, including any produced in 1877, the 1921 Stribling plat;
- Collection of all accounts that detail landscape activities in the cemetery;

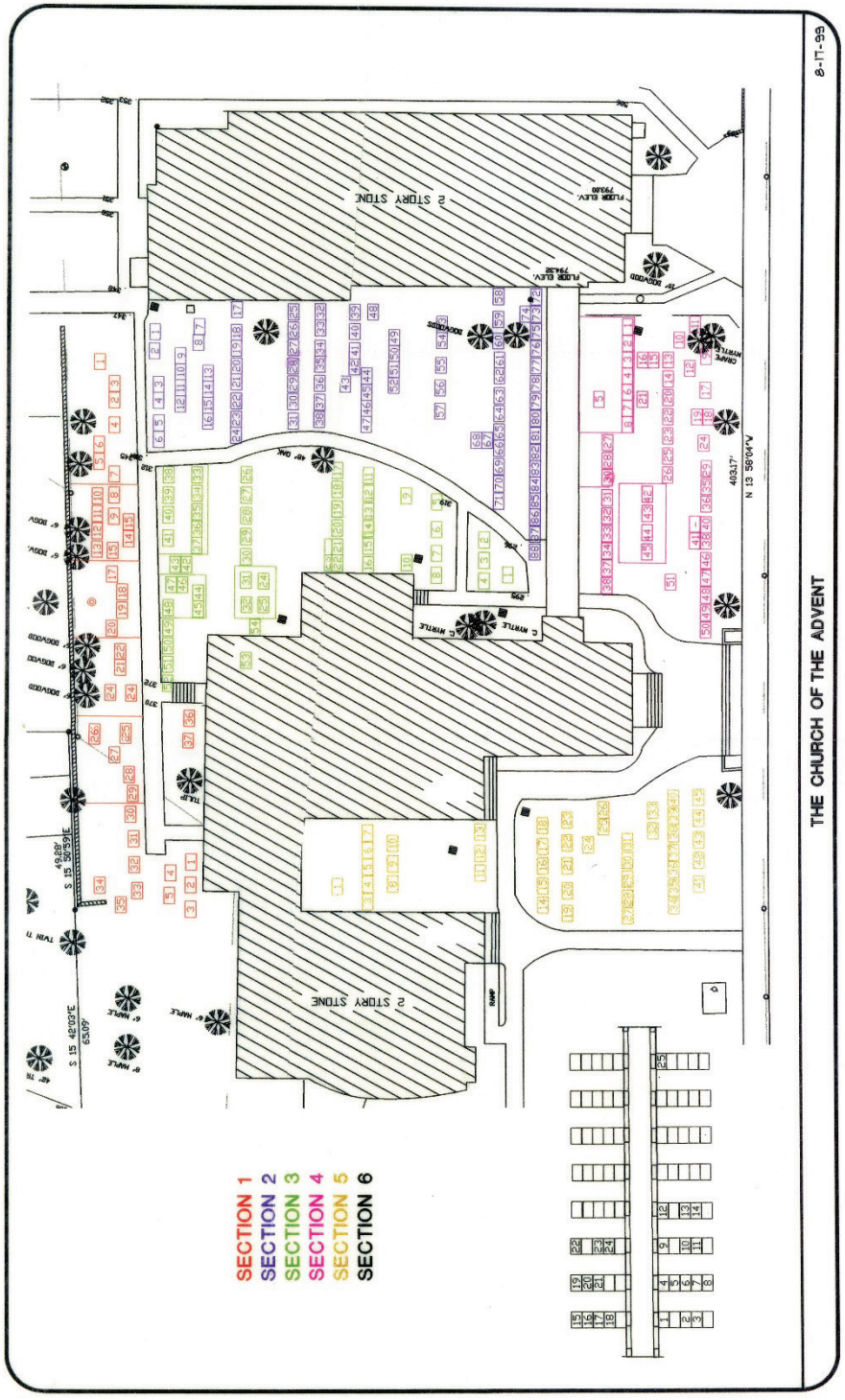


Figure 13. Plan of the cemetery prepared by Todd in 1999.

- Collection of all deeds and other documents associated with burials and plots at the cemetery;
- The role of the sexton at the Church and a listing of those employed;
- Further evidence of burials that may have been lost to construction phases;
- Evidence of any rules and regulations developed over the history of the cemetery;
- Further investigation of when sale of lots ceased; and
- Documentation of the creation of the columbarium at the cemetery.

Why Preserve?

Preservationists may take the question "why preserve" for granted; yet it remains an important issue, especially in the current economic climate. It is useful to provide at least some brief discussion of why preservation of Spartanburg's Church of the Advent Cemetery is a worthwhile – even critical – goal for the church and the community.

Cemeteries are different from all other types of historic sites. Most fundamentally they contain the physical remains of past generations and are considered sacred, consecrated ground. The right to a decent burial has long been recognized in common law. So, too, is the duty to continue a cemetery once begun. Thus a municipality, association, church, or other organization, by opening a cemetery, creates a duty through its officials to execute the trust and maintain the cemetery for the benefit of the public. Given the possibility that some burials may have been lost to various church building additions may call into question whether past church officials kept that trust, but those present today can certainly help ensure the preservation of this burial ground.

Cemeteries are also artistic sites, such as a sculpture garden or outdoor museum, which contain a collection of three-dimensional artifacts. Some evidence of this can be seen in the historic photographs of the cemetery. The monuments trace changes in both designs and social attitudes toward religious and moral views, death and eternity. They provide examples of the largely disappeared art of stone carving, illustrating numerous famous artisans. They are permanent collections, but must be considered finite and irreplaceable.

These collections are archives, having the same value and importance to the community as any paper archives. They are storehouses of genealogical information that often cannot be identified through any other means. They provide information concerning both the individual and collective pasts.

Sometimes it is thought that once a genealogical assemblage of the cemetery is collated and published, archival concerns have been fulfilled. This is incorrect. Few such compilations include detailed photographs and full transcriptions, including verses found on the stones. All aspects of the monument reflect the beliefs and aspirations of family members and help tell the story of the departed life.

In addition, part of this archive is the archaeological and bioanthropological information the cemetery contains – even if the burials are never excavated (just as not all archaeological sites are excavated, but remain significant resources). The graves and tombs can provide information on mortuary behavior, such as the coffins and hardware chosen by relatives. The human remains can provide information on diet, disease, and burial practices – information that is available from no other source.

Cemeteries may also be scenic landscapes, similar to parks or open spaces, except they are much more. They are far more fragile and susceptible to damage and deterioration. As such they require distinctly different care.

Thus, cemeteries are important social, historic, architectural, and archaeological artifacts. When there is little else physically remaining of a community's earliest history, there will often be a cemetery that provides a unique tie to the community's collective past that would otherwise be lost.

Thus, we see a broad range of reasons why we should be concerned about the preservation of the cemetery. We argue, in fact, that the significance of cemetery preservation is actually greater than the sum of its parts.

Preservation Fundamentals

Preservation is not an especially difficult concept to grasp, although the key principles are not always clearly articulated. The fundamental concepts are well presented in the Secretary of the Interior's Standards for Preservation (see Table 1).

This document reminds us – at least at a general level – of what caregivers need to be thinking about as they begin a cemetery preservation plan. Those responsible for the care of Spartanburg's first Episcopal cemetery should be intimately familiar with the eight critical issues the Secretary's Standards outline.

For example, all other factors being equal, a cemetery should be used as a cemetery. Until the caregivers are able to do what needs to be done, it is their responsibility to make certain that the site is preserved – it must not be allowed to suffer damage under their watch.

Caregivers must work diligently to understand – and retain – the historic character of the cemetery. In other words, they must look at the cemetery with a new vision and ask themselves, "what gives this cemetery its unique, historical character?" Whatever it is, those undertaking its care and preservation become the guardians responsible for making certain those elements are protected and enhanced (whether they are particularly appealing to the caregivers or not).

Whatever conservation efforts are necessary must be done to the highest professional standards; these conservation efforts must be physically and visually compatible with the original materials; these conservation efforts must not seek to mislead the public into thinking that repairs are original work; and the conservation efforts must be documented for future generations. If the caregivers aren't conservators, it is their responsibility as the stewards of the property to retain a conservator appropriately trained and subscribing to the Code of Ethics and Standards of Practice of the American Institute for Conservation (AIC). If volunteers are to be used, they must be thoroughly trained and carefully supervised to ensure that correct methods are used.

The Secretary of the Interior reminds those responsible for the resources that each and every cemetery has evolved and represents different styles and forms. Few, if any, cemeteries are "frozen in time."

It is the responsibility of care-givers to care for all of these modifications and not seek to create a "Disney-land" version of the cemetery, tearing out features that don't fit into their concept of what the cemetery "ought" to look like.

Likewise, caregivers are reminded that there will be designs, monuments, and other features that characterize the cemetery – and the caregivers are responsible for identifying these items and ensuring their preservation. Caregivers must be circumspect in any modifications, ensuring that they are not destroying what they seek to protect (a problem with virtually all "restoration" efforts).

Before acting, those responsible for preservation are required as good and careful stewards to explore and evaluate the property, determining exactly what level of intervention – what level of conservation – what level of tree pruning – is actually necessary. And where it is necessary to introduce new materials – perhaps a pathway – into the cemetery, they must do their best to make certain these new elements are not only absolutely necessary, but also match the old

Table 1.
Secretary of the Interior's Standards for Preservation

1. A property will be used as it was historically, or be given a new use that maximizes the retention of distinctive materials, features, spaces, and spatial relationships. Where a treatment and use have not been identified, a property will be protected and, if necessary, stabilized until additional work may be undertaken.

2. The historic character of a property will be retained and preserved. The replacement of intact or repairable historic materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.

3. Each property will be recognized as a physical record of its time, place, and use. Work needed to stabilize, consolidate, and conserve existing historic materials and features will be physically and visually compatible, identifiable upon close inspection, and properly documented for future research.

4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.

5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.

6. The existing condition of historic features will be evaluated to determine the appropriate level of intervention needed. Where the severity of deterioration requires repair or limited replacement of a distinctive feature, the new material will match the old in composition, design, color, and texture.

7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

elements in composition, design, color, and texture.

In other words, if the cemetery has dry laid rock walls, they would be failing as good stewards if they allowed synthetic stone on concrete masonry units – especially if the only justification was because a new wall was less expensive or easier to maintain.

Where conservation treatments are necessary, the Secretary of the Interior tells stewards that they must be the gentlest possible. However phrased – less is more – think smart, not strong – caregivers have an obligation to make certain that no harm comes to the resource while under their care. And again, one of the easiest ways to comply is to make certain that caregivers retain a conservator subscribing to the ethics and standards of the American Institute for Conservation.

Finally, the caregivers must also recognize that the cemetery is not just a collection of monuments and the associated landscape – the cemetery is also an archaeological resource. They must be constantly thinking about how their efforts – whether to repair a monument, put in a parking lot, resurface a path, or expand a building footprint – will affect the archaeological resources – archaeological resources that are the remains of people buried at the cemetery by their loved ones.

These are especially critical issues for the Advent Church cemetery. The cemetery has been fighting gradual – and at times exponential – deterioration since at least the late nineteenth century. At least some of these changes can be seen in Figures 4, 5, 6, 7, 9, and 10.

The Cemetery Location, Setting, and Context

This cemetery, once close to Spartanburg's southeast edge, is today encompassed in a dense urban area. It is in an area zoned as "Urban Center District" (DT-5) and is immediately east of the "Urban Core District" (DT-6).

The current Spartanburg zoning ordinance defines these areas as,

> the central shopping areas of the City. Here are concentrated activities which have primarily a city-wide and regional function: large stores offering comparison shopper's goods, specialty stores, business services, banks and other financial institutions, offices, theaters, hotels, and government buildings. The use of land is intensive and this intensity of use is one of the main determinants of the vitality of the Downtown Urban Districts. It is the purpose of these regulations to encourage such intensity of use and to exclude activities which have a negative effect upon the proper functions of the downtown area (City Zoning Ordinance, pg. 15).

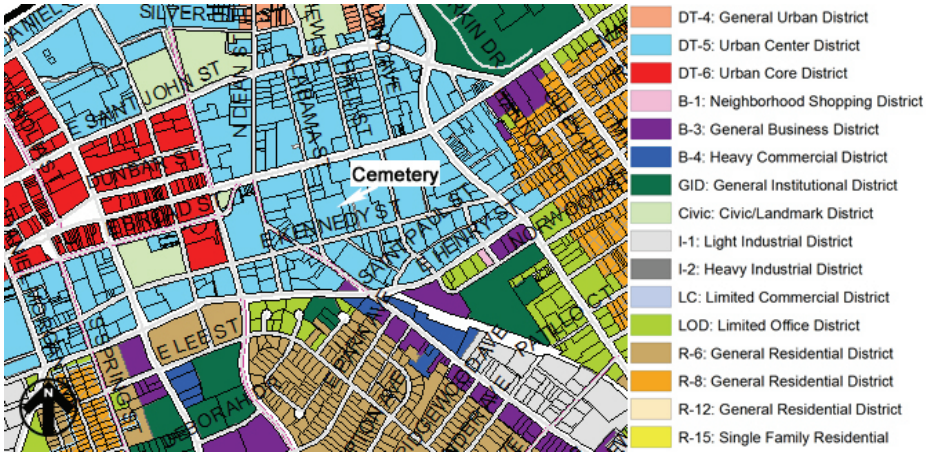


Figure 14. Spartanburg zoning map showing the location of the cemetery.

This single-minded focus on business and economic activity fails to recognize either the importance of green spaces such as the Advent Church Cemetery or the importance of historic properties that do not fit the narrow definition of "vitality" used by the City Council. This may, in the future, cause a threat to the cemetery.

Moreover, the City identifies the Central Business District as one of its four "Critical Development Areas," again focusing on commerce with little attention directed to cultural or historical values. The City's planning document, however, does speak to the issue of quality of life, but isn't clear on how City Council proposes to balance that with "economic vitality." Efforts to "target tourism" may be of assistance, but the Church needs to ensure that it has the resources to maintain the cemetery, even in the face of increasing visitation. The point is that tourism, without planning, can have a negative impact on historic resources such as the cemetery.

The stewards of the Church of the Advent Cemetery should keep a careful watch on zoning activities in the immediate area of the cemetery and carefully evaluate how seemingly short-term actions might impact the cemetery and its long-term preservation.

Fortunately, Advent Street appears to have only light vehicular traffic, at least during weekdays. We observed fewer than 50 vehicles during our assessment. There is little visual or noise impact on the cemetery. The surrounding church buildings and vegetation also provide a

buffer, helping make the cemetery feel secluded and peaceful.

The cemetery does not currently have any means of vehicular entry, nor does any appear to have ever existed historically. This requires all maintenance activities to access the cemetery using pedestrian pathways only – an issue that we will revisit in a future section of this study.

Spartanburg County is mainly on the Piedmont Plateau, but its northwestern corner is on the foothills of the Blue Ridge Mountains. The general slope is southeastward, which is the general direction of the main drainageways. The land ranges from nearly level to steep, but most areas are gently sloping to moderately steep. Elevations in the City range from 600 to 850 feet above mean sea level (AMSL). The Central Planning District is situated on a high point, surrounded by rolling hills. The elevations here range from 816 feet AMSL near the intersection of Main and Dean streets to 730 feet AMSL near the intersection of Wofford Avenue and a railroad crossing.

At the Church, elevations are about 800 feet AMSL and slope very gradually downward to the south, reaching about 780 feet AMSL at Kennedy Street. Within the cemetery the topography appears essentially level.

There are two major drainage basins in the City: Fairforest Creek, which flows through the western portion of the City, and Lawson's Fork Creek which flows through the eastern portion. Other streams in the City include Collins Creek, Chinquepin Creek, and Holston Creek. Flooding is not projected for the cemetery from either of these natural drainages.

Soils in the area are mainly sandy loams except where eroded, exposing clays and sandy clays. Geology is complex, with thirteen geological formations found in the county. These are composed of alluvium and various rocks ranging from quartzite to schist, gneiss, and granite.

The natural vegetation is primarily Oak-Hickory-Pine forest, composed of medium tall to tall forests of broadleaf deciduous and needleleaf evergreen trees (Küchler 1964). The major components of this ecosystem include hickory, shortleaf pine, loblolly pine, white oak, and post oak. At one time the cemetery included a number of cedars; today the dominating tree is an old oak, with additional oaks planted along Advent Street. Also present are several dogwoods and crepe myrtles. To the northeast, off the cemetery, are several maples. It is impossible today to obtain a feel for the nineteenth century character of the Cemetery.

The cemetery is situated in Census Tract 212, encompassing about 2 square miles with a resident population of about 3,400 people (Figure 15). Roughly speaking, the tract includes E. Daniel

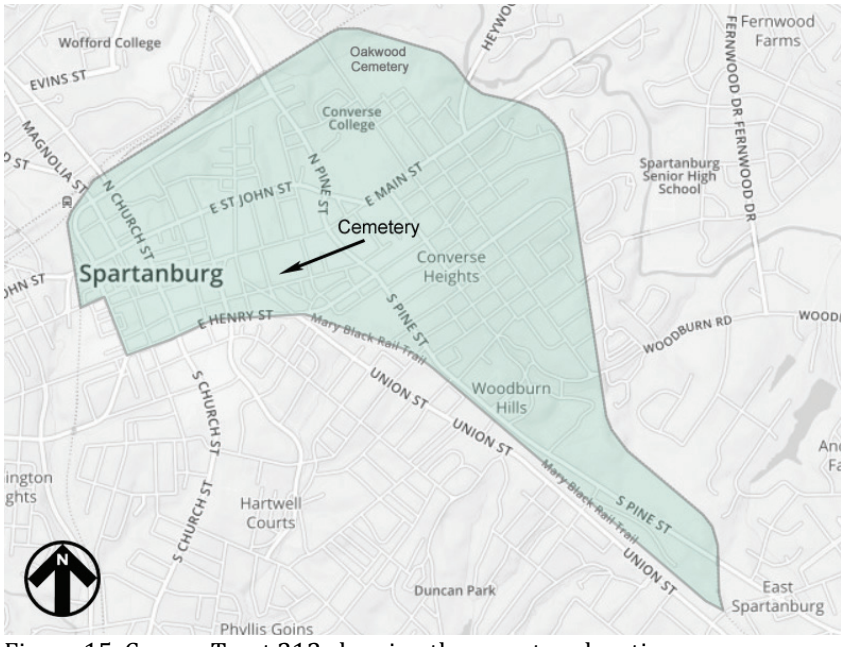


Figure 15. Census Tract 212 showing the cemetery location.

Morgan Avenue and Oakland Cemetery to the north, the area north of W. Henry Street, the area east and north of the Mary Black Rail Trail, and the area west of Lawson's Fork Creek. The value in examining these areas is that they surround the cemetery and can affect it in terms of community support.

The population in the area has a median age of 32.4 years, younger than the Spartanburg County average of 38. Like Spartanburg County, the Census Tract is predominately white, although by a significantly greater margin than the county as a whole (83% to 69%). In addition, the per capita income in this tract is $40,243, nearly double that for the county as a whole ($22,445). Those living below the poverty line in the tract comprise only 12.3% of the total population; in contrast 17.8% of those in the county live in poverty. Poverty within Spartanburg as a whole is significant, with over a quarter of the population (26.7%) living in poverty. Most of the families in Census Tract 212 are two-person households, with nearly half being married.

There are 1,663 housing units in this census tract, with 87% being occupied, and 61% being owner occupied. The occupancy rate city-wide is only slightly lower at 83%, although those occupied by owners overall is lower, at only 51%. Most of the census tract residents (78%) have lived there a decade or less. This is consistent with the relatively young age of residents. In contrast, 69% of those in Spartanburg have been in their current residence a decade or less, about the same for Spartanburg County as a whole. Consistent with these findings, just over a quarter of those living in this census tract had moved in since the previous year. In contrast, mobility is far less county-wide, at only 14%.

The median value of owner-occupied housing in the census tract is $219,800, compared to $121,700 for the city as a whole. Those living around the cemetery are generally well-educated, with nearly 91% having a high school education or higher and 61.3% having a bachelor's degree or higher. In contrast only 27.4% of the city residents and 22.6% of the county residents have a bachelor's degree or higher.

All of this indicates that the cemetery is found in a relatively affluent area. Residents are young and well-educated. Poverty is not a significant issue overall.

Yet, in spite of these conditions, Spartanburg has one of the highest crime rates in the United States. While City Council is disputing the methodology to arrive at the specific number, there are 7,411 crimes in Spartanburg per 100,000 residents (with 2,801 reported incidents). The rate in South Carolina is 3,958/100,000 and in the United States the rate is 2,962/100,000.

Looking exclusively at property crimes, the rate is still very high: 6,445 crimes per 100,000 residents – nearly twice that for South Carolina as a whole.

In spite of these rates, or perhaps because of them, the City of Spartanburg has a relatively robust law enforcement agency, with 126 full-time officers. This is 3.33 officers per 1,000 residents, compared to the South Carolina average of 2.19 officers.

Looking at crimes within ½-mile of the cemetery over the past 30 days, we have identified 12 crimes (Figure 16).

Thus, there is a significant potential for both violent and property-related crime in the cemetery.

In the 2013 Point in Time survey of homeless, 341 homeless individuals were identified (5.6% of the state total). Most of these are between the ages of 33 and 52. Spartanburg was also identified as one of the counties with the highest increase in unsheltered homeless (151 individuals). Mental illness and substance abuse are both significant factors according to the study for Spartanburg County.

The picture that emerges is a fairly typical urban cemetery that while situated in a relatively

Figure 16. Crimes within ½-mile of the cemetery over the past 30 days.

affluent area, is also faced with poverty and homelessness. Security must be a critical, long-term preservation concern.

Factors Affecting the Landscape Character

Only one soil series is present on the cemetery tract; Urban Land-Cecil complex, 2 to 10 percent slopes. Urban land consists of areas that have been altered by cutting, filling, and shaping; Cecil soils are likely the predominant original soil. The surface layer to 0.2 foot is generally a brown sandy loam. The subsoil, up to about 0.8 foot, is generally a mixture of red and brown sandy clay loams. To about 2 feet there is red clay and variations extend to depths of 5 feet.

As previously mentioned, the cemetery is not within a100-year flood zone, although we did observe numerous drains in the cemetery. These may be necessary given the very hard and compact soils present. It is likely there is substantial water run-off during periods of heavy rain.

Spartanburg has a humid subtropical climate with long hot and humid summers, and modestly cool to semi mild winters.

The day-to-day weather is controlled mostly by the movement of pressure systems across the county, but complete changes of air masses are relatively few in summer, since masses of tropical maritime air persist for long periods.

The average annual relative humidity is 68%. The average annual temperature is 62°F. Winter temperatures are generally in the mid-50s, although about 60 days have temperatures at freezing or below. Summer temperatures are in the high 80s and low 90s. Temperatures of 100°F or above typically occur about three days between June and August.

Typically, abundant precipitation is distributed fairly evenly throughout the year, with an average annual precipitation of about 51 inches. Figure 17, however, reveals that South Carolina exhibits considerable potential for drought. Disastrous droughts occurred in 1925, 1954, and most recently in 2001. History suggests that a drought may occur once or twice in every 10 years.

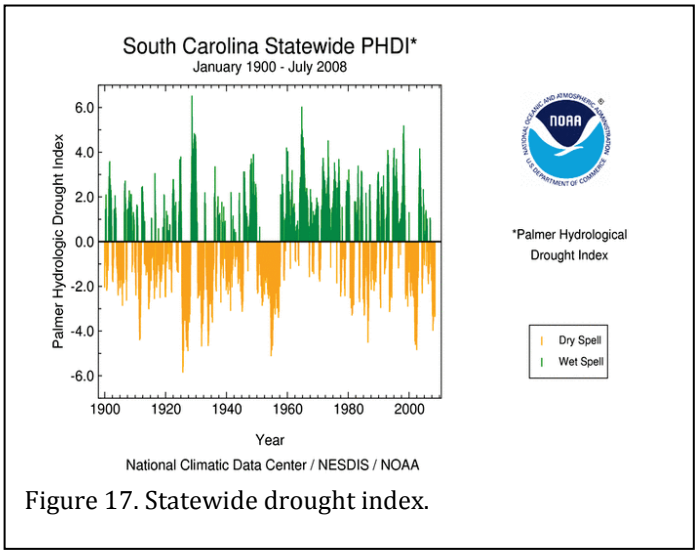


Figure 17. Statewide drought index.

Spartanburg County has had 29 tornadoes since 1952, including one in 1990 that occurred less than 0.25 mile east of the cemetery. The longest path was over 16 miles and the widest was 700 yards.

The area has an average growing season of about 227 days, although this will vary by specific location, with low areas often evidencing late frosts. Figure 18 shows that virtually all of Spartanburg County is situated in Plant Hardiness Zone 7b, where the minimum temperatures are expected to be between 5 and 10°F. Since this "new" planting zone map was released, the zones have shifted even further northward, potentially placing Spartanburg County in Zone 8a.

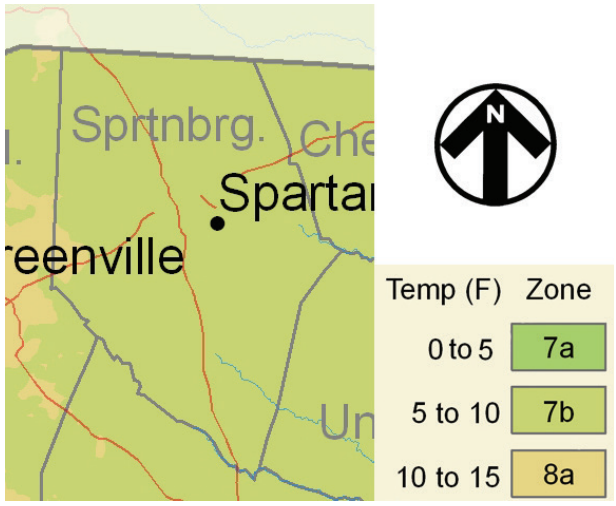


Figure 18. Plant Hardiness Zones for the Spartanburg County area.

This is an area where a limited set of the Hot Climate Grasses, such as Bermuda, Centipede and Zoysia, perform best. The major limiting factors are the propensity for drought and sudden cold weather.

Administrative Issues

As noted in the history, the Church of the Advent has, on several occasions, closed its cemetery to further burials and at some point afterwards burials were again allowed. With this history in mind, the assessment questionnaire noted that, "the graveyard is officially closed to future interments," although "there remains a question that there are additional spaces to which certain families may be entitled in accordance to original deed rights." Nevertheless, the only provisions specific to the cemetery are found in the 1999 Bylaws (Article 10), which establish the specific wording to be used in deeds, require the Vestry's approval of all monuments, and prohibit the expansion of the cemetery. There are no current provisions affecting plantings, the use of flowers or other mementoes, or replacement monuments. Each of these issues will be discussed further in following sections.

When the Archives Committee was asked how requests for in-ground burial on presumably open plots would be handled, it became clear just how unprepared the church is for such an event.

There are a variety of specific issues that should be considered, for example:

- How would a deed be confirmed, since the Church has no deed records for the cemetery?
- How would it be confirmed that no burial already exists in a supposedly open plot?
- Who would bear responsibility should a prior burial be impacted during the effort to bury in the cemetery?
- How would the cemetery allow the grave to be opened and closed (i.e., must the grave be dug by hand? Who would be responsible for restoration of landscape and other monuments or curbs damaged during the burial?)
- What does the Vestry intend to examine to determine if a monument is acceptable (i.e., exclusively artistic concerns? The nature of the foundation? Size and materials concerns?)

Just these few concerns reveal that the

Church is poorly prepared to be faced with a demand for burial in the cemetery. Therefore, it becomes critical that a variety of administrative issues be considered – even if they are likely to be needed only very occasionally. Suggestions include:

- Request through the church bulletin and legal notices in the local newspaper that anyone thinking they may have a valid deed come forward within a proscribed period of time. An attorney should be consulted to determine if a mechanism is present to limit the time in which claims can be made.

- Establish a provision that requires prospective users of a plot which they claim to be vacant to assume all legal responsibility should human remains be encountered. Perhaps offering a columbarium spot and releasing ownership might be used as an alternative to assuming this liability.

- Establish a provision that all burials must be opened and closed by hand, without the use of any mechanical equipment. The firm opening and closing the grave must assume responsibility for any damage to other monuments, plot curbs, water lines, drains, or vegetation.

- Establish a provision that outlines in some detail issues regarding materials that are acceptable within the historic cemetery, as well as establishing foundation requirements (recommendations concerning both are offered elsewhere in this assessment).

While those hoping still to be buried in the cemetery may feel these recommendations to be onerous, since the cemetery has been closed since at least 1999 – 18 years ago – surely they have had some inkling that practices were changing.

Another approach, which we favor as the simplest and most direct approach is to close the cemetery to all future burials, offering anyone believing (and able to demonstrate) they have burial rights columbarium space instead. This would allow the cemetery to be managed as a historic resource, without the effort of trying to minimize use-damage and determine liability for a lack of reasonable records.

Recommendations

- Caregivers should carefully review the Secretary of Interior Standards, focusing on a fuller understanding of how daily operations may affect the long-term preservation of the cemeteries. Based on this review adjustment should be made to current policies and procedures.

- Historic research is not a critical component of preservation efforts, especially since the cemetery is already listed along with the structure. However, there are a variety of unaddressed issues which could be addressed by volunteer research. Some of the issues, involving deeds, plans, and other details, have been raised in these discussions.

- There are no meaningful provisions dealing with use or care of the cemetery. Some issues, such as flowers and replacement monuments, will be dealt with in following sections. In addition, however, we recommend that the Vestry determine how claims to burial space will be resolved.

Roads and Pedestrian Issues

Vehicular Access

There are no roads in the cemetery and, therefore, no vehicular access. In fact, even maneuvering a utility vehicle in the cemetery would be difficult given the cemetery's small size and numerous monuments.

The cemetery fronts on Advent Street, which provides two 12-foot travel lanes and parking on both sides of the street. There is also designated handicapped parking in front of the church and cemetery. The church also has a large parking lot directly across from the cemetery and east of the cemetery that is available to visitors.

Pedestrian Access, Pathways, and Sidewalks

We suspect that most people visiting the cemetery arrive by vehicle. Although designated a bicycle friendly community in 2007, we saw very few bicyclists during our visit and in general the roads in the downtown area are not especially conducive for the use of a bike for transportation. In addition, the cemetery is within a block of only one Spartanburg bus route, the Hillcrest Route, which runs down East Main Street with a stop at Advent and East Main. All of the other routes are at least two blocks from the cemetery.

There are, however, sidewalks readily available for determined pedestrians. On the east side of the street sidewalks provide pedestrian walkways of between 4 and 6 feet. The effective width, however, is reduced by utility poles and various signage. Sidewalks on the west side of Advent Street are less obstructed.

The cemetery is not fenced or gated, so there is no physical limitation to pedestrian traffic.

Photographs reveal that originally the cemetery had dirt paths between plots (see, for example, Figures 4 and 5). By at least 1946 some of these were replaced by poured concrete walkways, most being 3-4 feet in width. Widths change without warning and in at least one case the walkway has been made steep by wrapping partially around a tree. Otherwise, these concrete pathways are in good condition and the grass is being trimmed away from them to establish a clear boundary between the walkway and grassed area. There are several areas where the concrete has developed cracks and grass is growing in these areas. This indicates a lack of adequate maintenance.

The use of poured concrete was not an especially appropriate material for pathways. It does withstand a great deal of wear and tear, including tree roots. However, it appears very harsh and uninviting in a historic cemetery. A better choice would be laid brick. These would require more maintenance, but they present a softer and more inviting appearance. Even tinting and/or stamping the concrete would have improved its overall appearance.

In the rear of the church (east edge of the cemetery), laid 2x2 foot pavers have been used rather than concrete. They, however, have not been maintained and today pose a significant tripping hazard to visitors. Grass is also growing between the blocks, giving an unkempt or neglected appearance.

It is difficult to determine if "social trails" or unintended paths are present since many areas in the cemetery lack grass or other ground cover. However, it appears that at present the grounds

Figure 19. Concrete sidewalks in the cemetery. Upper view shows multiple widths. Lower view shows grass growing in cracks.

Figure 20. Poorly maintained paver pathway on east side of the cemetery. Many pavers pose a trip hazard and no effort has been made to control grass and weeds.

receive relatively low visitation and the existing pathways are likely adequate.

Universal Access

Many who visit cemeteries are elderly and therefore impairments associated with older age should particularly be taken into consideration. In addition, while it is not always possible to make a natural landscape fully accessible, partial access is better than none at all. Moreover, all future modifications should explore accessibility issues in an effort to maximize access by all citizens.

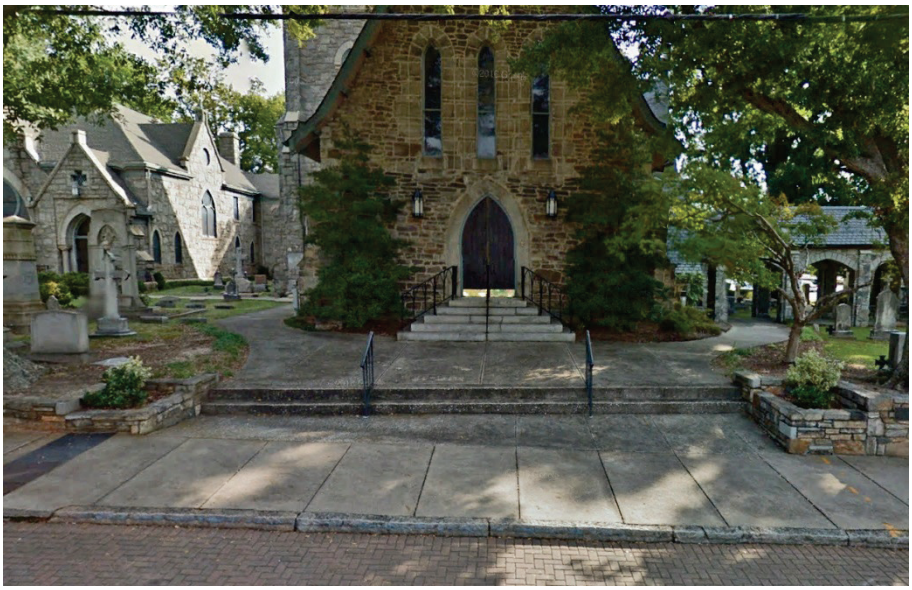


Figure 21. Front entrance steps prevent handicapped access to the front of the cemetery.

The first impediment to access are the steps at the front of the church. This is the route most visitors would take, especially since there is handicapped parking both on Advent Street and also in the parking lot directly across from the cemetery. Two steps must be climbed before visitors have access to the concrete pathways. There is another walkway to the north of the church, but for an individual using a walker or cane it is too long for convenient use.

We recommend that a portion of the steps be removed to allow a suitable handicapped ramp be installed. In general, the maximum rise for a ramp run is 30 inches. The front stairs are well under this, allowing one straight or continuous run to be installed. The slope of a ramp must not be more than 1:12. Additional study is necessary to determine if there is adequate space for such an installation. Finally, handicapped ramps must have a minimum clear width of 36 inches, with handrails outside this clear width.

This ramp would allow access to the cemetery sections north and south of the church, as well as to the niches in the Cloisters.

Some of the concrete pathways in the cemetery are too narrow to allow convenient handicapped access (in fact, ideally paths should be at least 5'7" in width to accommodate wheelchair users and people with visual impairments assisted by a sighted person or guide dog), but modifications would most likely impact existing graves. Therefore, we do not recommend any modifications at present.

There are, of course, additional issues in achieving universal access, such as the use of appropriate signage and even the selection of routes in the cemetery. While ADA compliance may not be required, the goal should be to create additions to the cemetery that are as accessible as possible. In addition, existing obstacles to access should be removed wherever possible.

Recommendations

- If the concrete pathways require replacement in the future, other materials should be evaluated to provide a more inviting physical appearance.

- Weeds are growing in several cracks in the concrete sidewalks. These weeds should be chemically treated and after being killed should be physically removed.

- The laid pavers on the east side of the church and cemetery have not been maintained and require resetting to eliminate the trip hazard.

- The laid pavers are not having weeds and grass maintained around them and this is causing a neglected appearance. Regular trimming must be part of the maintenance program.

- All future modifications at the cemetery should be evaluated for their impact on universal access. Universal access should be a goal whenever possible.

- An effort should be made to establish ramp access to the cemetery grounds at the front of the church.

Cemetery Boundary Wall

At least one historic account claims that the stone wall at the eastern edge of the cemetery is "original," although what this means is uncertain. Edmunds (1998:18) claims it was built in 1876. It does appear that the blocks used to construct the wall are consistent with those used to build the church. All this demonstrates, however, is that the same or similar quarry site was used.

The wall runs for about 160 feet, turning a 90-degree corner at its northern terminus. It appears to follow an early property line, although this has not been clearly documented.

The wall is laid in random rubble, meaning that the stone is either undressed or roughly dressed. At least some sections clearly reveal that stones have been laid in layers of equal height and this is known as coursed random rubble masonry.

As Figure 22 reveals, there are at least three courses. The lowest appears constructed of on a base of larger rocks and built up with smaller rubble. Then there is a second layer composed of large rocks, occasionally infilled with smaller rubble. On top of this is a third course of moderate size rubble, although some very long flat rocks are included. Whether these three courses are consistent through the entire wall or if they represent multiple building episodes is unknown. Large flat cap stones are used on the top of the wall.

Some of the larger stones may be "through stones" used for joining faces and backing. In such cases the smaller stones were used for filling in. However, the reverse side of the wall does not show the coursing so visible on the cemetery side. Additional study is necessary to better understand the construction methods used.

Unfortunately, the wall has been heavily repaired using at least five different ordinary Portland cement (OPC) mortars in the past. These repairs are clearly visible on both sides of the wall. None exhibit much skill, so it is tempting to suggest that much of the repair work was done in the twentieth century.

It is impossible, even with far more detailed study, to determine if the northern corner and terminus is original or has been modified.

Regardless, it has become impossible to discern if any original mortar (which might help determine construction periods) still exists.

Today the wall is in satisfactory condition, although plants are being allowed to grown on it in several locations. These plants will, over time, cause deterioration of the mortar and we recommend their removal.

The vines should not be pulled off the wall since that may cause damage to the mortar. Instead, all vines should be cut at ground level and the stalks painted (not sprayed) with an herbicide. This will translocate into the roots, killing the vines, without depositing any of the herbicide on the stone wall. Eventually the cut vines will die and fall off the wall. Afterwards, care should be taken to prevent future growth on the stone.

Eventually it may become necessary to make repairs on this wall. A critical standard in pointing mortar joints is the National Park Service Preservation Brief 2, *Repointing Mortar Joints in Historic Masonry Buildings*, available online at http://www.nps.gov/hps/tps/briefs/brief02.htm. It is written by two of the foremost authorities in the United States.

This document makes several critical

Figure 22. Stone wall along the east edge of the cemetery. Upper photo shows the three courses of random rubble. The lower photo shows heavy vine growth that must be removed.

points:

- the new mortars must match the historic mortar in color, texture and tooling;
- color of new mortar is largely controlled by the sand aggregate, thus matching aggregate is critical;
- the new mortar must have greater vapor permeability and be softer (measured in compressive strength) than the masonry units;
- the new mortar must be as vapor permeable and as soft or softer (measured in compressive strength) than the historic mortar; and
- mortar is designed to be – and must be – sacrificial.

If these five rules are followed, the mortar will comply with NPS standards, be appropriate for repair work on historic structures, and most importantly "will do no harm."

Often masons use a Type S masonry cement field mixed with sand. Masonry cement is a prepackaged combination of Portland cement and plasticizers. The mix of these bagged mortar mixes is typically proprietary and is not required by ASTM standards to include hydrated lime (ground limestone is accepted). Great compressive strength is neither needed nor appropriate. The 28-day compressive strength of these mortars is 1,800 psi – far too hard for the limestone. Consequently, masonry cements are not recommended for use on preservation projects.

Recommendations

- All vines growing on the wall should be cut at ground level and their stems painted with an herbicide.

- Future maintenance activities should ensure that vines are not allowed to grow on the wall.

- Any future repair efforts should use high lime mortars. An architectural conservator should be consulted to ensure correct materials and techniques are used.

Cemetery Security

The cemetery is situated in a downtown area with a high documented property crime rate. In spite of this, the caregivers report no known vandalism in the cemetery and indicate that homelessness is rarely a problem. Supporting these assessments, we failed to identify any evidence of vandalism. While the church has an insurance policy through the Church Insurance Company of Vermont, the caregivers are uncertain if it would cover acts of vandalism. Trash was not common.

Figure 23. Clothing found during the cemetery assessment.

We are told that homelessness is not currently an issue, but there is an officer with the Spartanburg City Police skilled in dealing with the issue. We did, however, find one article of clothing which is often an indication of homeless activity (Figure 23).

Finally, we are told that lighting in the churchyard is part of the overall security plan at the church.

Vandalism

The church does not have a formalized mechanism for identifying or reporting vandalism specific to the cemetery setting. There is a correlation between maintenance and vandalism; at present maintenance on the east side of the church is poor and this, with the dense shrubbery in the area, may promote problems. Thus, maintenance is currently not at the level necessary to limit vandalism.

At the present time there is no systematic inspection process. It seems unlikely that the maintenance staff would recognize vandalism for what it is, or have any idea when it occurred. It will be difficult to ascertain the level of damage the cemeteries suffer without some method of periodic inspection.

There are relatively few studies of the causes of vandalism. Those that exist present a broad range of possible reasons, including poverty, unemployment, disintegration of family life, and availability of drugs and alcohol. Other studies include problems inherent in single family homes and parents that fail to guide their children in social and moral issues. Even the judicial system itself is thought to contribute to the problem by failing to deal more harshly with offenders (see, for example, De Wet 2004).

Unfortunately, cemetery specific vandalism

has not been studied and we must rely on studies largely focused on school vandalism to understand the phenomenon (although we have no assurance that the two can be reasonably related). Most school vandals are typically young (junior high school), male, and act in small groups. Participating in vandalism often helps a youth to maintain or enhance his or her status among peers. They have typically done poorly academically and have little or no understanding of how their behavior affects others. They are not, however, any more likely to be emotionally disturbed than their peers who do not commit vandalism. Those who commit vandalism are not likely to be judged harshly by their peers. Youth who lack fulltime parental supervision during after-school hours are more likely to commit vandalism.

To this we can add that our experience with vandalism suggests a very strong correlation between the vandalism and considerable alcohol consumption. Moreover, we find that vandals extend in age well into the 20s.

Physical measures to reduce vandalism – such as installing fences and erecting lights – have great appeal. Such projects are easy to understand and physical measures generally have only a one-time outlay of funds. Nevertheless, most authorities agree that vandalism is the combined result of the offenders' characteristics and those of the physical and social environment in which the behavior occurs. If our response is to be effective we must focus on both the person and the environment. Programs that target only one of these variables – such as physical measures – will not be successful in the long-term. Moreover, they run the risk of making the cemetery appear fortress-like.

Unfortunately, measures that examine offender behavior, administrative policies, or community involvement seem more complex and difficult to implement. Group consensus for more complex programs may be more difficult, largely because the possible responses can be overwhelming. To simplify, we will focus on four main tactics: those that impact the physical environment, those that impact the offender, those that focus on administrative practices, and those that enlist the community's help. We encourage the implementation of a balanced approach involving all possible tactics and believe that the success of programs to reduce cemetery vandalism rely on a broad-based initiative.

Changes to the Physical Environment

Post Regulatory Signage

Access-control signs are an important part of "rule setting" in that they establish the types of activities prohibited in the cemeteries. As discussed in the section entitled “Other Maintenance Issues,” the cemeteries require regulatory signage. These signs need to be installed at all entrance points and must be large enough to be clearly seen.

Lighting

Lighting is sometimes seen as reducing vandalism. There is no consensus on whether well-lit areas or "dark" locations are superior in terms of crime prevention. Cemeteries were not lighted historically. Thus, the introduction of lighting detracts from the historical integrity of the properties, changing the historic fabric. Another issue to be considered is that lighting is only useful if there is someone guarding the property, using the lighting to identify problems. This is not the case in most cemeteries, including the one at Episcopal Church of the Advent.

There are currently multiple Cobra Head luminaires at both the front (along Advent Street) and rear (along the stone wall) of the cemetery. There are, in addition, lights on the church windows, at least one light on the adjacent office building, and pathway lights. While we did not visit the cemetery at night, we suspect that it is abundantly lit.

This lighting may contribute to the lack of

vandalism we observed. Regardless, we do not recommend that any additional lighting be installed.

Repair damage quickly and improve the appearance of the Cemetery

Clean, well-maintained cemeteries free of debris or garbage, free of evidence of past vandalism, and with attractively landscaped grounds are less at risk for vandalism. Consistent maintenance may serve as an "occupation proxy," giving the appearance that the cemetery is under steady surveillance by those concerned about keeping it safe. Conversely, cemeteries with much trash, evidence of damage, or poorly maintained grounds give the appearance of abandonment; if no one in society cares for the property, why should the prospective vandal? Simply put, the appearance of abandonment breeds additional damage and vandalism. Thus, it is critical that the level of maintenance at the cemetery, especially on the difficult to see east side, be improved.

Offender-Focused Responses

Increase the Frequency of Police Patrols

We are told that the church is not currently routinely patrolled, but assistance would be requested should vandalism occur. From our perspective, this is too late. Cemeteries should be on a routine list of properties to be driven by on a nightly basis.

Increasing the frequency with which police patrol the periphery of the cemetery increases the likelihood that potential vandals will be seen. Even though there are no roads through the cemetery that would allow police to readily access the grounds, the act of raking their spot light through the cemetery will give the appearance of visibility.

Patrols should be especially vigilant during holidays such as Halloween.

Hold Offenders Accountable

Very few perpetrators of cemetery vandalism are identified and apprehended, and even fewer are prosecuted. Courts are generally lenient with offenders, and in most cases, the damage from an individual incident is seen as minor and does not appear to warrant harsh penalties. However, creative and well-publicized interventions to hold offenders accountable can have both a specific and a general deterrence effect. Restitution programs include a set of administrative and legal procedures to get money from offenders to pay for repair or replacement of damaged property. Publicizing the results of these efforts is important to maintain their deterrent effect.

The church should ensure that police investigate any evidence of vandalism and work to secure an arrest. If an arrest is made, representatives of the cemetery should be present in court, testify concerning the impact – and cost – of the damage, and ask for the maximum punishment possible. If no restitution is required by the court, the church should consider civil court action to recover costs associated with professional repair of the damage.

Management Practices

Maintain an Inventory of Cemetery Stones and Their Condition

Vandalism often goes unreported because cemetery caregivers do not know what is present in the cemetery or its condition. Thus, vandalism can be overlooked as pre-existing damage. This makes a complete stone-by-stone assessment critical for near-term inventory purposes.

Volunteers must also become familiar with the stones in the cemetery and their condition. While it is obviously impossible to know each stone, volunteers may be assigned specific areas to become familiar with the stones and the condition of the stones in that one area. Inspections could then be conducted monthly.

Chicora Foundation, Inc.
PO Box 8664
Columbia, SC 29202
803-787-6910

CEMETERY VANDALISM/DAMAGE REPORT FORM

Cemetery: **Number of Stones/Objects Involved:** **Are Human Remains Involved:** ☐ yes ☐ no

Grave #: **Section #:** **Lot #:**

Date/Time Damage was First Observed: am/pm **Name of Observer:**

Date Last Observed Undamaged: am/pm **Name of Observer:**

Potential Witnesses:

Nature of Damage (attach photographs of damage):

Date Reported to Police: **Investigating Officer:**

Police Incident No: **(Attach a legible copy of police report to this form)**

Estimate of Damage (attach justification, conservation treatment proposals): **$**

Owners of Monuments Identified: ☐ yes ☐ no **Owners Will Repair:** ☐ yes ☐ no ☐ not certain

Follow Up with Police:

Repairs Undertaken by Cemetery (attach conservation treatment reports):

Total Cost of Repairs: $ **Insurance Eligible:** ☐ yes ☐ no **Date Claim Submitted:**
Date Claim Approved/Paid: **Amount of Claim Payment: $**

Internal Evaluation for Future Prevention:

Form Completed By: **Date(s):**

Figure 24. Example of a vandalism report recommended by Chicora.

Vandalism Records

We recommend that the church develop a form designed for the reporting of cemetery-specific vandalism (Figure 24). This form should include information such as what was damaged, with specific information concerning each stone, including the name and lot/plot; how the stone was damaged (toppled, broken into how many fragments, scratched, etc.); where is the stone now (was the broken stone gathered up for storage, if so, where it is stored); an estimate of when the damage occurred, including the last time the stone was known to be undamaged; an estimate – from a conservator – of the extent of the damage and cost for repair; a photograph of the damaged stone; when police were notified; when police responded and took a report, with a copy of the report attached; and the outcome of the police investigation.

Figure 25. Example of a gate protected with stainless steel cabling that has been painted to blend with the fence.

Theft

There are no specific records of theft. Nevertheless, one of the most attractive targets is the single fence gate in the cemetery.

It is a simple maintenance step to use woven stainless steel wire to secure gates to their hinge posts. This allows the gates to open and close, but makes them considerably more difficult to lift off their hinges and steal. The cost to protect gates is less than $20 each and the time involved is about 15 minutes. This is something that the maintenance staff or volunteers could easily accomplish. The NPS article, beginning on page 39 is available at https://www.nps.gov/CRMjournal/CRM/v25n2.pdf provides additional information.

Dealing with the Homeless

Clearly homelessness is an extremely complex social problem that impacts the quality of life in every community. There are no easy solutions. There is a fine line between homelessness as a social issue and a criminal issue. Many homeless are on the street because of substance abuse, mental illness, or both. Often the disorder issues associated with homelessness are criminal in nature but difficult to enforce.

All laws with respect to public behavior should be enforced in the cemeteries by law enforcement. Should any shopping carts, bedding, or other personal belongings be found secreted away in the cemeteries, they should be removed from the property promptly. The landscape must be maintained to prevent hiding places and to ensure clear lines of sight. The cemetery must be kept free of litter and debris.

Recommendations

- Regulatory signage is necessary at all entrance points to the cemetery.
- Improved maintenance would help deter future vandalism in the cemetery and should ensure that shrubbery is pruned to allow sight lines.
- Volunteers should periodically inspect the cemetery for vandalism or other problems.
- A thorough stone-by-stone inventory with photographs would help document the current conditions at the cemetery.
- The single plot gate should have stainless steel cabling used to attach the gate to the hinge post to reduce the potential for theft.
- The church should begin using a cemetery-specific form to identify and record evidence of vandalism.
- The church should periodically evaluate the need for policies dealing with homelessness in the cemetery.

Cemetery Fixtures and Furnishings

The boundary wall, which might be considered a "fixtures and furnishing," has already been discussed in a separate section. Readers should review that previous section for additional information on the rock wall along the eastern side of the cemetery.

Amenities

Amenities are not common, but include several benches, a birdbath, several urns, and a water fountain (Figure 26).

Several benches are all on church property, not individual graves, and include iron and wood. Another bench, which may be on a grave and is in much better condition, is granite. Eventually all benches require some degree of maintenance and this can be readily seen if the wooden bench on the east side of the church is examined. While still functional, the bench is close to failure and should be replaced.

There is currently no prohibition against benches or regulation regarding the material. We recommend that in the future only granite benches be permitted since they are most likely to survive with minimal maintenance. In addition, consideration should be given to prohibiting additional benches since they would not typically have existed when the cemetery was most active and are therefore out of character. Relatively few benches appear to be used on a routine basis and their presence may simply attract vagrants or others that will discourage use of the cemetery by the public.

There is a birdbath on the eastern side of the cemetery. While we understand the idyllic scene the church is attempting to promote, the birdbath is not being cared for – it lacked water and was filled with trash. This feature should be used as it was intended, or removed from the cemetery.

We observed at least one urn in the cemetery. Urns are often sold by monument companies to clients who are unaware of the upkeep. As a result, the urns often hold water, breed mosquitoes, collect trash, are turned upside down, or are just ignored. They are rarely repaired or replaced when broken. They are likely not used since most floral arrangements today come in their own plastic container, rendering the urns and vases redundant. We saw no urns actually planted in annuals or perennials as they were intended to be.

Since all monument designs must be approved by the Vestry, consideration should be given to prohibiting the introduction of additional urns or vases in the cemetery.

The last item is a water fountain that was likely installed when there was a playground to the east of the cemetery. The playground was converted into other uses, but the fountain was left in place.

It currently works, but will eventually require maintenance. We see no need for a water fountain in a cemetery setting. The church should evaluate whether it warrants maintenance expenditures or should be converted into a simple hose bibb.

A final item is a concrete alter on the north side of the church. It is currently in good condition although its placement, even against the church wall, may be over an existing grave. We do not recommend such additions to the cemetery since they not only require additional maintenance, but they may well intrude upon pre-existing burials.

Figure 26. Examples of various amenities in the cemetery. Upper row shows a deteriorating wooden bench on the east side of the church and an iron bench in the Cloisters; middle left shows the bird bath filled with trash; middle right shows an urn filled with trash; lower left shows a vase filled with trash and weeds; lower right shows the old water fountain that may originally have been associated with the playground east of the cemetery.

Introduction of Additional Memorials

Various groups may wish to introduce new markers or memorials into the cemetery or families may wish to replace existing markers. In general, since the cemetery is now listed on the National Register of Historic Places, the church should be very circumspect in allowing modern additions to the landscape or modifications of the existing historic fabric. It is very important that the historic context and appearance of the cemetery be carefully maintained.

Replacement Monuments

All people deserve the dignity of ensuring their grave is marked and there are times when a marker is so eroded or difficult to read that it no longer serves as an appropriate memorial.

The original marker should never be removed. Nor should it be recarved. Instead, the original marker should be left in place and a new marker laid at its foot as a lawn marker (a horizontal plaque). The new marker may be bronze or granite as both exhibit considerable longevity. By allowing only lawn markers, the three-dimensional landscape of the cemetery is maintained, while the grave continues to be memorialized.

The new marker should contain only what is (or was) on the original marker, with the addition in small letters that it is a replacement marker erected in a particular year. This helps ensure that it is made clear that it is a recent introduction into the historic cemetery.

New Monuments

New monuments should be allowed only for new burials. These new monuments should match existing markers as closely as possible. If granite must be used, it should be limited to shades of gray (pinks, reds, blacks, and similar colors should not be permitted). Preferably lawn markers (flush-to-the-ground) should be used in order to preserve the three-dimensional appearance of the cemetery.

In addition, the church should not allow the mounting of any plaques, emblems, or other devices on historic monuments (i.e., monuments 50 years or more in age). Any organization that wishes to especially recognize an individual in the cemetery with such plaques or emblems should be allowed only to attach the devices to a granite lawn marker and place the marker flush with the ground in proximity to the existing historic marker.

Recommendations

- The church should not allow the introduction of additional benches, urns, or vases in the cemetery.
- The church should also be careful to prevent other introductions that are out of character with the historic cemetery such as grave decorations.
- The introduction of new memorials must be very carefully monitored and limited. New monuments should be allowed only when the historic monument is no longer legible. In such cases, the original monument must remain and a new flush marker with the precise language of the original marker erected as a flush-to-ground lawn marker.
- New monuments marking new burials (if any are eventually allowed) should match existing markers in size, material, and design. If this is not possible, then new markers should be limited to gray granite. Preferably any new marker should be erected as a lawn marker flush to the ground.

Landscape Issues

The church is currently using a private contractor which has been under contract for several years. The contract for the service cannot be located, but the Advent Archives Committee describes the work as "mow and blow." This is a term (often, "mow, blow, and go") used to describe minimal landscape maintenance consisting of mowing, blowing grass off walkways or streets, and leaving for the next job. Such work represents the lowest level of landscape maintenance and involves no pruning, weeding, soil testing, pest control, trash collection, or other maintenance activities. By its very description the service provides only the most minimal level of service.

The Boston Historic Burying Grounds Initiative (Atwood et al. 1989) estimated that mowing old cemeteries with 3-dimensional monuments requires six-times the labor than modern lawn park cemeteries (Klupar 1962:239; Llewellyn 1998:100). As a consequence, contractors must have a specific skill set.

Appropriate maintenance established by good practice includes weed control, tree trimming, pruning, seasonal cleanup, maintaining the roads, conducting section inspections, survey of monuments for maintenance needs, maintenance of shrub beds, maintaining section signs, maintaining water lines, rehabilitation of barren areas, raking, resetting stones as needed, inspecting and repairing fences, watering newly planted areas, sodding as necessary, identification of trees for removal, removal of flowers and grave decorations, removal of wild growth, and inspection and cleaning of catch basins (see, for example, Klupar 1962:226-228).

The importance of maintenance was clearly stated by West, "one thing is certain, the cemetery must be maintained in a proper manner or public confidence will suffer" (West 1917:26).

This section will review current practices and provide recommendations for long-term improvement, looking at issues of the lawn, shrubbery, and trees.

Job Oversight

It appears that no one is uniquely responsible for overseeing the outside landscape

Elements	Work Performed this month	Problems requiring attention	Suggestions for Improvement
BEDDING PLANTS & PLANTERS			
SHRUBS & TREES			
GROUNDCOVERS			
PERENNIALS & GRASSES			
LAWNS			
HARD LANDSCAPE AREAS			
IRRIGATION			
LIGHTING			
OTHER			

Figure 27. Brief landscape maintenance report.

Cemetery Maintenance Inspection Form

Cemetery:_____ Date:_____ Inspected By:_____

Elements	Issues	Good	Requires Attention	Not Applicable	Comments/Location
LAWNS	General Appearance				
	Mowing Height				
	Water/Moisture				
	Edging/Trimming				
	Pest/Disease Control				
	Weed Control				
	Fertilization				
	Other				
BEDDING PLANTS & PLANTERS	Plant condition				
	Water/Moisture				
	Pest/Disease Control				
	Cultivation				
	Staking				
	Dead Heading				
	Trimming				
	Fertilizing				
	Weed Control				
	Edging				
	Mulching				
	Other				
PERENNIALS & GRASSES	Plant Condition				
	Water/Moisture				
	Pest/Disease Control				
	Cultivation				
	Staking				
	Dead Heading				
	Trimming				
	Fertilizing				
	Weed Control				
	Edging				
	Other				

Chicora Foundation, Inc. • PO Box 8664 • Columbia, SC 29202 • 803-787-6910

Elements	Issues	Good	Requires Attention	Not Applicable	Comments/Location
SHRUBS & GROUNDCOVERS	General Condition				
	Water/Moisture				
	Pest/Disease Control				
	Pruning				
	Shearing				
	Trimming				
	Weed Control				
	Cultivation				
	Fertilizing				
	Mulching				
	Other				
TREES	General Condition				
	Water/Moisture				
	Pest/Disease Control				
	Edging Wells				
	Mulching				
	Pruning				
	Repair				
	Hazards				
	Plant Support				
	Stakes/Wires/Anchors				
	Base Damage/Girdling				
	Fertilization				
	Other				
IRRIGATION	Heads/Risers				
	Pressure				
	Coverage				
	Controller Settings				
	Leaks				
	Other				
DRAINS/DITCHES	Debris				
	Pollution				
	Other				
FURNISHINGS & FIXTURES	Damage				
	Dirty				
OTHER					

Chicora Foundation, Inc. • PO Box 8664 • Columbia, SC 29202 • 803-787-6910

Figure 28. Form that can be used by the church as an independent evaluation of landscape conditions.

contractor. As might be imagined, with lack of oversight, there is no assurance of performance or that the performance will be a standard suitable for a cemetery setting. Outside contractors and their technicians must be supervised and held accountable for their performance.

It is critical that the church take a more active role in the management of the cemetery. While not everyone can be equally well versed in all aspects of cemetery management, this assessment should provide the background for the individuals of the Committee to more fully understand what needs to be accomplished.

The contractor should be responsible for providing the church with a written monthly report itemizing activities during the month. This document need not be extensive; Figure 27 provides a brief list that may be helpful. Figure 28 provides a more extensive checklist that the church may find helpful when representatives independently review the condition of the landscape.

Contractor Qualifications

Sadly, professional training in the landscape industry, at least among the public, is undervalued. This contributes to rapid turn-over and inappropriate maintenance activities. It promotes firms offering little more than "mow, blow, and go" service.

In 2005 the Associated Landscape Contractors of America (ALCA) and the Professional Lawn Care Association of America (PLCAA) merged to form the Professional Landcare Network (PLANET). Today the organization is known as the National Association of Landscape Professionals. This organization offers a variety of certification programs. Many universities offer similar training. For example, the University of Georgia offers certification training, as well as on-line and DVD training programs.

Table 2.
Certified Landscape Contractors in the Greenville-Spartanburg Area

Name	Firm	Phone
Mallory Pope	Brickman	(864) 877-9088
Richard Dusty Bateman		(864) 271-9963
Zachary Brooks Dees	Oxner Landscape Maintenance	(864) 277-3317

The church should inquire concerning professional memberships and training. There are three nationally certified individuals in the Greenville-Spartanburg area, shown in Table 2.

Contractor Dress and Behavior

If the contractor's staff doesn't wear uniforms, the church should expect a minimal dress policy. Such a policy should specify that employees be fully clothed at all times, to include upper garment to cover body from the waist to the neck, and long pants. No shorts or sleeveless shirts are to be worn. Garments that have a message, slogan or printing of any kind should be prohibited. Employees must maintain a neat and professional appearance throughout the work day. No shirts or pants should have holes or otherwise appear unkempt.

Landscape staff must also have, and use, appropriate safety equipment, including safety glasses and hearing protection. For some tasks, steel toed boots would also be required.

Cemeteries are special places and all employees must understand that their work often requires contact with, and exposure to, grieving individuals. Cemetery personnel must exercise and exhibit absolute decorum, courtesy, and respect while within the cemetery or at its perimeter or entrances.

Employees must not engage in loud or boisterous behavior, angry outbursts or use profane or abusive language at any time on the cemetery.

Playing radios and/or electronic

games/devices, smoking or chewing tobacco products must never be allowed in the cemetery.

Food and beverages (other than water breaks) should not be consumed on cemetery grounds.

Intoxication, and violence or criminal acts of any kind should never be tolerated - and should be cause for immediate removal from cemetery property. Use or sale of intoxicating beverages and/or drugs should be strictly prohibited.

No employee should sit, lean or place any item of his person on any headstone/markers and should never place or lean equipment on any headstone/marker.

Many of these requirements will undoubtedly be incorporated in the landscape firm's policy, but it is up to the church to ensure that they are enforced.

Cemetery Soil

The church reports that no soil sampling for either turf or trees is currently conducted. This certainly can't be a result of cost, since commercial analysis is no more than $20 per sample and the work might be performed at an even lower cost by Clemson University. Regardless, it becomes impossible to manage vegetation in the cemetery if there is no data on the condition of the soils.

It is good practice to test soils every three to five years and we recommend this practice begin immediately.

For this assessment samples were collected from the north cemetery area (an area of sparse grass), the south cemetery area (an area of dense centipede grass), and the south cemetery area (an area of moss and compacted soil). Analysis was conducted by A&L Eastern Laboratories. The results of these tests are provided in Figure 29.

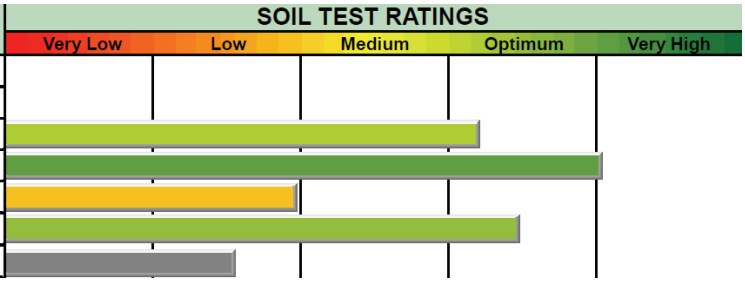
The two samples with little or no grass (on the north side of the church and on the south south around the large oak) have very low cation exchange capacity (3.5 and 5.0 meg/100g). In the vicinity of the centipede lawn area fronting Advent Street, it is noticeably higher, 10.3 meg/100g. The cation exchange capacity is the maximum quantity of total cations, of any class, that a soil is capable of holding, at a given pH value, available for exchange with the soil solution. It is used as a measure of fertility and nutrient retention capacity, and in general, the higher the number, the higher the soil fertility. The cation exchange capacity can be improved with the introduction of humus and organic matter. This is necessary in all three areas since, even while the one area has a relatively high cation exchange capacity, all of the soils test very low for organic matter. In other words, these two results alone show that the soils are relatively unable to retain nutrients and thus are infertile.

The soil pH in the two areas with little or no grass are 4.7 and 5.6, figures that are acidic and outside the optimum plant growth range. In addition, pH levels of 5.5 or lower will reduce soil microbial activity. Liming is recommended to bring the soil pH to 5.8, although a range up to 7.0 is acceptable to most plants. No liming is recommended in the south front section, where the soil is at a neutral pH of 7.0.

Phosphorus (P) levels are typically low or medium; this nutrient is found in optimum levels in only the sample from the north area. Phosphorus is essential for photosynthesis, seed and fruit production, plant energy production, and cell division. Adequate supplies will promote root growth and formation, greater flowering and seed production, better growth in cold temperatures, and efficient water use. Soil compaction and a lack of aeration – both problems at the Advent Cemetery – will reduce phosphorus levels. In general soils with low cation exchange capacities – such as those at the church – will require higher phosphorus levels to supply plants. Similarly, since much of the phosphorus in soils is provided by the available organic matter, if organics are low, the phosphorus will likely also be low (as is the case here).

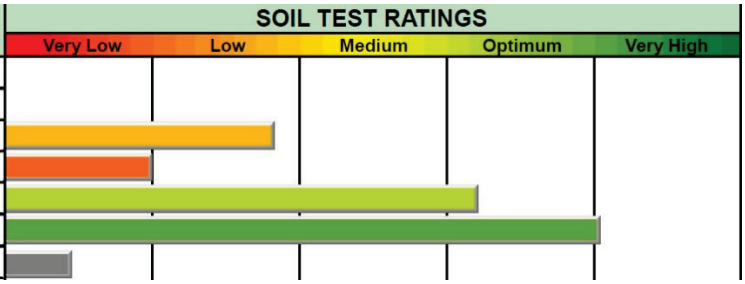
Potassium (K) is also essential in

Test	Results
Soil pH	5.6
Buffer pH	6.85
Phosphorus (P)	61 ppm
Potassium (K)	132 ppm
Calcium (Ca)	340 ppm
Magnesium (Mg)	83 ppm
Organic Matter	1.7 % ENR 79



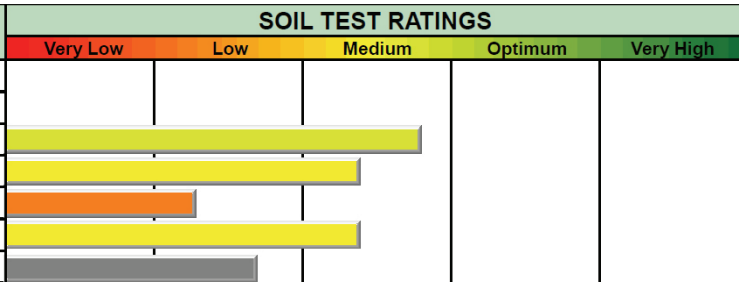
North portion of the cemetery with little grass

Test	Results
Soil pH	7.0
Buffer pH	
Phosphorus (P)	28 ppm
Potassium (K)	60 ppm
Calcium (Ca)	1498 ppm
Magnesium (Mg)	313 ppm
Organic Matter	0.4 % ENR 43



South portion of the cemetery near Advent Street

Test	Results
Soil pH	4.7
Buffer pH	6.68
Phosphorus (P)	48 ppm
Potassium (K)	75 ppm
Calcium (Ca)	349 ppm
Magnesium (Mg)	70 ppm
Organic Matter	2.0 % ENR 83



South portion of the cemetery with little grass

Figure 29. Soil sample results.

photosynthesis, plant growth, and effective response to drought stress. Like phosphorus, it tends to be reduced by low pH and low cation exchange capacities. By reducing compaction and improving aeration, potassium levels are improved.

Calcium and magnesium levels range from low to optimum.

This brief discussion reveals that the availability of many plant nutrients is being affected by the low soil pH and organic matter. Correcting the problems will involve raising the pH (i.e., liming) several areas and reducing soil compaction.

Coupled with these recommendations are also suggestions on appropriate fertilization (Table 3).

Table 3.
Recommended Liming and Fertilization for Turf Areas

Area	Lime (lbs/1000 square feet)	Fertilizer (lbs/1000 square feet)	Fertilizer (N-P-K)
North area	15	5	10-20-15
South area	0	5	10-0-20
South area at tree	58	5	10-20-15

If fertilizers are to be applied, slow release organic fertilizers are preferable to commercial inorganic fertilizers since they have significantly lower salt indices and are thus much safer for the monuments. An excellent source explaining the differences between organic and inorganic fertilizers is http://www.ext.colostate.edu/mg/Gardennotes/234.pdf.The publication at http://extension.uga.edu/publications/displayPDF.cfm?number=C853 provides information on converting traditional inorganic fertilizer recommendations to safer organic recipes.

Turf

Turfgrass should be an important concern of cemeteries, although it rarely is given adequate attention. With an appropriate turfgrass, mowing frequency is reduced. This reduces labor costs, pollution, equipment expenditures, and perhaps most importantly for historic properties, damage to the stones.

The cemetery lacks a defined type of turf except for the south area adjacent to Advent Street, where a good stand of centipede is present. Elsewhere there are small patches of declining centipede mixed with broad leaf "weeds," moss, and bare soil.

It is clear that the cemetery turf has received little attention beyond trimming. This has lead to an overall decline in appearance and an increase in maintenance costs.

Mowing

We are told that the grass is actually cut using nylon trimmers. The parcel is small and many areas are very crowded with monuments. We suspect – but cannot confirm – that the current contractor has focused on large deck mowers and is unable to get these into the cemetery; therefore, the only option is the use of trimmers. It is also possible that as more of the turf has gone into decline, less area needs any trimming.

Figure 30. Grass not mowed and covering several monuments.

We believe that it is possible to use, at least in some areas, walk behind mowers with decks no larger than 21-inches. Such a mower should be operated no closer than 6-12 inches from stones and those areas should then be finished using trimmers.

We are told that the cemetery is "mowed"

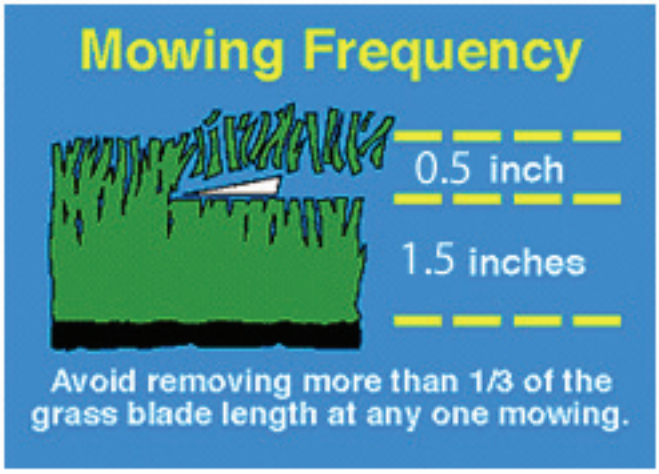


Figure 31. Proper mowing height is not optional if the cemetery wishes to maintain healthy turf.

weekly. However, during our assessment, we found that the entire east side of the cemetery had not been trimmed in over two weeks, given the length of the grass in this area.

If this was an oversight, it speaks to be lack of supervision on the part of both the contractor and the church (Figure 30). It seems just as likely that since this area is hidden, it was ignored. Regardless, there is no excuse for such poor performance and our impression was that no one on the Archives Committee was aware that the work had not been done.

In general centipede (and Bermuda, as well) should be mowed to a height of 1½-inches. Since the rule is that only one-third of a grass plant should be removed in one mowing, this means that if you intend to properly mow centipede turf at a height of 1½-inches, you can allow it to grow to a height of no more than about 2-inches. If you allow the grass to get taller than 3-inches you'll mow down into the stems that have grown tall. This will produce poor looking turf, stress the grass, and may cause disease.

In addition, if the grass is allowed to become too high, the removal of grass adjacent to monuments becomes more difficult with longer and thicker grass blades – and this in turn will lead to more damage to the stones.

There are some exceptions to these rules. For example, it is good practice to increase the mowing height for grass growing in the shade. This allows for more leaf area to intercept as much available light as possible. In addition, leaf blades in shaded areas will be longer and narrower and a lower cutting height will cause an excessive reduction in leaf length.

It is also appropriate to raise the height of the cut during stress periods, such as summer heat. Research reveals that grasses maintained at higher mowing heights have deeper root systems and improved drought tolerance. In addition, raising the mowing height of warm-season grasses as fall approaches will help the grass better over-winter.

Although we did not observe areas where the grass has been scalped, we did find examples

Figure 32. Build-up of dead grass in the turf.

(Figure 32) where trimming has resulted in the development of dead grass. This is promoting

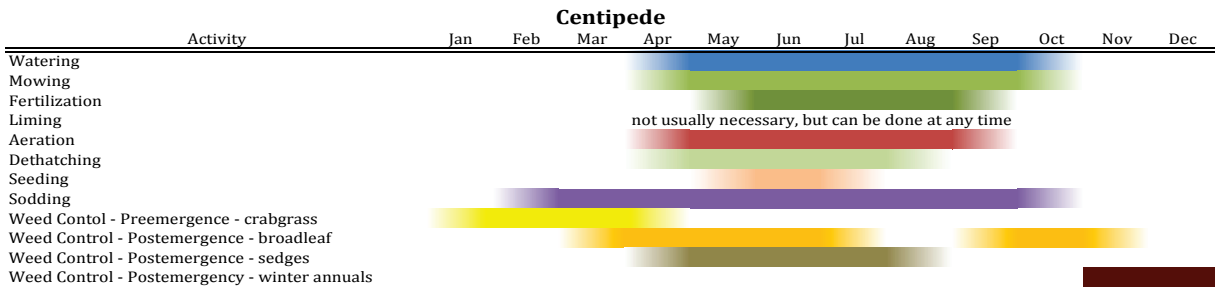


Figure 33. Maintenance calendar for centipede grass.

disease and reducing the health of the turf. This is the result of using only a nylon trimmer, which cannot appropriately mulch the grass blades, resulting in large clumps of dead vegetation.

Where nylon trimmers are used it is critical that a very light weight line be used – along with worker attention – to minimize damage to soft stone such as marble. We recommend a line diameter no greater than 0.065-inch.

We are also informed that the contractor does not blow grass clippings off the monuments. This is good practice and reflects respect for the monuments and the families who have loved ones buried in the cemetery. As a routine step, after mowing and trimming, all monuments must be blown clear of debris.

Throughout the cemetery we observed either bare spots, areas of heavily compacted clay, and patches of thick moss. These areas require renovation as discussed below.

Fertilization and Weed Control

We understand that the cemetery is not using any pre- or post-emergent herbicides on the turfgrass. Good lawn management, which includes proper fertilization, mowing and watering, will produce a healthy dense turf which is difficult for weeds to invade. This turf, however, has received poor treatment and many areas exhibit dense weeds. Weed treatments coupled with better turf management practices can make a significant difference in the overall appearance of the grass.

Centipede

Centipede is often referred to as "lazy man's grass" due to its infrequent mowing and fertilization requirements. This makes it an excellent choice for cemeteries with minimal maintenance capabilities. Nevertheless, it still requires some care and attention. For example, centipede prefers some acidity (pH less than 6.5). It is intolerant of compaction, low potassium, excessive thatch, drought, or heavy shade.

While there are grasses that can better thrive in the shade, it is our view that the issue is best dealt with by mulching under dense shade trees and not attempting to grow grass. Otherwise, we have previously recommended soil modifications.

Several areas have soils that are very acidic for other plants and trees, so the goal is to raise the soil pH to a level that will encourage the health of other plants, while maintaining the acidity for centipede. Thus, a one-time liming may be sufficient. In a year additional soil tests should be conducted to determine if a fertilization program will be necessary.

Centipede can be fertilized in June, July, and August. Centipede should not have nitrogen applied. Chelated iron can be sprayed to improve the turf color.

We observed strong stands of broadleaf weeds. Treatment for this problem should occur from late March through June, but can be repeated

Figure 34. Soil and turf problems. The upper photo shows bare soil and moss in a densely shaded area. The lower photo shows a similar area, with the addition of a nylon mesh indicating that unsuccessful sodding or seeding has taken place in the past. Areas such as these should be converted to mulch.

in October. Centipede is sensitive to certain herbicides such as 2,4-D and MSMA, so it is critical to follow label directions and use caution. Manor or Blade (metsulfuron) are good broadleaf herbicides that will not damage centipede when used as directed. These are not, however, typically available without a pesticide license and their use will require the church to ensure that at least one employee has a landscape pesticide license.

SedgeHammer (halosulfuron) may be used for sedge control; Vantage (sethoxydim) is safe for postemergence weedy grass control.

Irrigation

The cemetery does not have an irrigation system and, in general, we do not recommend them – they use very large quantities of water, their placement can interfere with markers and graves, and their operation can cause erosion to stones.

We found only two functional hose bibbs. One is located south of the church entrance steps and the other is situated in the rear of the church at the water fountain. These would provide spot watering for stressed areas, although several hundred feet of hose would be necessary. The resulting drop in water pressure can be minimized by ensuring that at least a ¾-inch hose is used. Good quality industrial 100-foot hoses should be expected to run about $100.

Renovation

We recommend that the cemetery implement a renovation program in order to establish a good stand of a single grass type. This work can be accomplished section by section, gradually implementing the efforts throughout the cemetery.

A warm season grass, such as centipede, is probably a good choice, as long as its use is coupled with mulching under trees and shady areas where almost no grass will grow. The Clemson publication *Lawn Renovation* (http://www.clemson.edu/extension/hgic/plants/pdf/hgic1204.pdf) provides information on renovation of existing turfgrass areas.

Bare areas can be replanted in late May

using sod or, less desirable, plugs on 6-inch centers. Centipede can be seeded at ½ pound per 1,000 square feet if no preemergence herbicide has been applied within two months of planting.

Core Aeration

There are many compacted areas of the cemetery that would be significantly improved with core aeration. As in the case of mowing, bigger is not necessarily better. Relatively small hand operated equipment will be needed to prevent damage to monuments. The equipment should use hollow tines or spoons so that soil cores 2 to 3 inches deep and ½ to ¾ inch in diameter will be removed. Aeration is best accomplished during periods of active plant growth and when the soil is moist enough to allow deep penetration.

We do not recommend this as a routine activity, but it will benefit the vegetation every 3 to 5 years. It is especially recommended in those areas with dense moss, even in the area will eventually be mulched.

Pest Control Practices

We were surprised that we failed to identify any fire ant colonies in the cemetery. Whether this is fortuitous or reflects an on-going program we don't know. Regardless, care should be taken to prevent fire ants from invading the property.

One survey done in 1998 concluded that 33,000 people in the state of South Carolina sought medical attention as a result of fire ant stings. Of those 15% had severe localized allergic reactions and 2% had severe systemic reactions resulting in anaphylactic shock. Thus, fire ants are not simply an aesthetic nuisance, but they can pose a significant threat to the health of cemetery visitors.

An exceptional resources is the document, *Managing Imported Fire Ants in Urban Areas* (http://extension.uga.edu/publications/displayPDF.cfm?number=B1191). It is worth noting that treatments cost only about $24/acre.

Shrubs

Many churchyards, lacking space, were not planted. However, at least as far back as the 1890s, photographs show shrubbery and trees in the cemetery. Many were undoubtedly planted by plot owners, although there is some historical documentation suggesting that the church engaged in beautification efforts. Regardless, it appears that in recent years the shrubbery in the cemetery has been ignored. The current landscape contractor is providing no maintenance and as a result conditions have rapidly deteriorated.

The most significant problem is that the shrubbery is being ignored. It has been left unweeded, resulting in rank vegetation overtaking plantings. Where some effort has been taken, the plants have been poorly pruned by individuals without adequate knowledge, skill, or training.

Selection and Planting

Most shrubs appear to be individual specimens, probably anticipated to serve as accents. Shrubs (and other plantings) identified in the cemetery include camellia, eleagnus, azalea, crepe myrtle, holly, and boxwood (in addition, the groundcovers ivy and liriope are also present). The number and placement of plantings is not particularly effective overall since they lack a unifying or cohesive theme. Many are primarily planted as "foundation plants." We failed to identify anything that we would classify as some remnant of an original planting plan. Additional research may assist in helping to understand changes that may have taken placed in the cemetery over the past 100 years.

As with trees, when shrubs require replacement, they should generally be replaced with like material, especially if they represent plants traditionally used in cemetery settings. If planting lists cannot be located for the cemetery, plants such as forsythia, hydrangea, lilac, and memorial rose (in addition to those listed) are all known to be period appropriate.

Figure 35. Shrubbery problems. Upper row photos show improperly pruned and damaged shrubs. Middle row left photo shows a shrub that has been chopped down to the ground. Middle row right shows weeds overtaking liriope bed. Lower row photos show two clumps of shrubs that are entirely overtaken by weeds and vines to the point that it has become impossible to distinguish the shrubs from the invasive vegetation.

Fertilization

As with trees, the best indication of the need for fertilization is a soil test, which should be performed at least every three to five years. While some shrubs, such as boxwood, provide an indication of deficiency through the yellowing of lower leaves, such evidence can be missed and does not indicate the extent of the problem.

Where fertilization is necessary most shrubs, because of their shallow root systems, respond adequately to broadcasting the appropriate organic fertilizer around the base of the plant, typically at the drip line.

Most shrubs should be fertilized when they are actively growing and have available water to help absorb nutrients. Broad-leaved evergreens, such as boxwood, are best fertilized in the winter or spring. Summer or fall fertilization of these plants may induce late season growth that is highly susceptible to winter injury.

Pruning

As mentioned, it is in the category of pruning maintenance that we see problems at the cemetery. The two most obvious problems are inappropriate or technically incorrect pruning and the failure to remove weedy plants and vines from shrubs.

Examples of inappropriate pruning include virtually all of the boxwoods, as well as severely pruned plants along the east wall of the church. Much pruning appears to have been done with shears, or even worse, nylon trimmers, instead of clippers. The continuous shearing of the shrubs has caused a thick outer shell of foliage which creates dense shade on the interior branches. This continuous shade has resulted in significant foliage drop, decreasing the health, value, and aesthetics of the plants.

Shrubs are best pruned, rather than sheared, to maintain a natural shape and to keep plants at a desired size so that they do not outgrow their landscape too quickly.

Allowing weedy plants to overtake shrubs detracts from their beauty and natural shape. Many of the shrubs in the cemetery look as though they have grown whiskers.

Proper Pruning

In general, summer-flowering plants should be pruned before spring growth begins since these produce flowers on the current season's growth. Spring-flowering plants, such as forsythia, should be pruned after flowering since they produce flowers on the previous season's growth.

By-pass pruners are generally chosen for most pruning tasks in either 6 or 8-inch lengths. The pruners must be very sharp and it is good practice to sterilize the pruners by dipping them in a 10% bleach and water solution between plants.

We provide some general instructions below, but staff that are to undertake pruning should receive specific, and detailed, training.

Pruning Boxwood

Boxwood tends to develop a very dense growth habit. This thick foliage can be a major factor in disease development. In addition, the dense outer foliage, especially if the plant is sheared, will encourage outer growth, while everything on the plant's interior dies from lack of sunlight.

Annual thinning brings light and air into the interior of the plant and encourages the growth of new foliage within the canopy that can take over for branches damaged by ice or snow.

Boxwoods can be trimmed at any time of year, but for plant health it's best to avoid pruning in the late fall as this may expose new, tender growth to freezing weather. Often they are pruned in the early spring, after the threat of deep freezes is over.

Some boxwoods are in such poor

condition they require renewal pruning. This technique usually involves cutting the plant back to within 6 to 12 inches of ground level. This is not the best approach for boxwoods and the plant is likely to decline and die. A better approach is to avoid drastic removal and instead cut back stems over a period of three years. At the first pruning, remove one-third of the old, mature stems. The following year, take out one-half of the remaining old stems and head back long shoots growing from the previous pruning cuts. At the third pruning in yet another year, remove the remaining old wood and head back the long new shoots.

An excellent overview of reviving and pruning boxwoods is available at http://www.usna.usda.gov/Gardens/faqs/BoxwoodThinning.html.

Pruning Azalea

The best time to prune azaleas is in the spring, just after blooming. This will give the plant a full growing season to fill out and recover (especially from drastic pruning) before winter.

The first branches to be removed are those that are shaded out. Then evaluate the overall appearance of the plant and determine what can be removed while maintaining the desired shape of the plant.

Older plants may have a number of tall branches which need to be eliminated. Doing that over several years reduces the shock to the plant. Remove two or three of the tallest branches, taking care to cut back to a side branch which is heading in the desired direction, and which is about one third the size of the cut branch. Cut close to that side branch, as any stubs will die back to the side branch anyway, and leave dead wood which may become infected later.

Next year take out two or three more branches using the same process, spreading the pruning over a three year cycle. This approach will result in the plant sending out new growth near the base, and lets you manage the shaping of the plant.

Pruning Elaeagnus

This plant has exuberant, flowing growth and should never be sheared or made to look "neat." They may, perhaps every second or third year, require some pruning to keep them in check or correct a defect.

Pruning to maintain shape and size should be done when the plant is dormant, during the late winter or early spring or in the late fall after the flowers bloom. Broken branches should be removed just above a strong bud. Remove branches growing into the interior of the shrub or that are rubbing against other branches, removing the smaller and weaker of the two. Growth that is longer on one side or in one area may be cut back. The cuts should be just above strong buds or branches.

Finally, dead or broken branches can be removed at any time of the year, trimming back 2 to 3-inches into healthy wood and about ½-inch above a strong bud or branch.

Other Plants

These discussions should allow the common shrubs in the churchyard to be properly pruned. There are a few isolated examples of other plants and we are providing links to some reasonable overviews.

Holly - http://www.finegardening.com/how-to/articles/pruning-hollies.aspx?id=102060

Camellia
https://www.americancamellias.com/care-culture-resources/general-culture-requirements/pruning-camellias

Cemetery Trees

The cemetery has relatively few trees and most are planted on the periphery. There is one large oak in the center of the cemetery, south of the church. It is obviously important to the cemetery since at some point the church paid to have

lightning rods installed.

Other trees include magnolia and hollies east of the church, outside the current cemetery; dogwoods along the east edge of the cemetery; oaks at the street on the west side of the cemetery; and other scattered dogwoods.

All of the trees have been ignored in recent years, resulting on tangled branches, improper pruning, and declining conditions. The condition of these trees makes removal of several necessary; the remaining trees require professional attention in the very near future.

Selection Issues

Cemeteries, in general, have historically been dominated by large deciduous trees, although evergreens such as cedar are also very common. The trees provide a distinctly inviting image for visitors and passersby. They also provide some visual separation from adjacent buildings – especially in cluttered urban environments. They provide shade, reduce stormwater runoff, stabilize soil, and reduce evaporative water loss.

Ideally the trees selected should be historically appropriate. In the case of a churchyard cemetery it is likely that most trees were either volunteer or were planted during various beautification efforts. For example, the large oak in the center of the cemetery is almost certainly a volunteer. The dogwoods were intentionally planted. Previously planted cedars declined in health and were removed.

All other issues being equal – plantings should focus on those tree species that are known to have been commonly used in churchyard cemeteries in the past. While diversification may be acceptable, it should be held in check, especially in such a small space as the Advent Cemetery. Therefore, we urge care in selecting additional plantings, focusing on a small number of historically appropriate trees to maintain the historical integrity of the cemetery.

Some trees, whether historically appropriate or not, should probably be avoided since they pose significant maintenance issues. These include trees that produce dense shade (causing problems with the turfgrass); trees that exhibit suckers or surface roots (also causing turfgrass problems, e.g., beech, honeylocust, linden, poplar, and willow); trees that drop large quantities of leaves, seeds, or sap (such as ash, black cherry, catalpa, ginkgo, horsechestnut, mulberry, and sweetgum); and trees that are especially weak or vulnerable to wind or ice damage (such as ash, black cherry, pine, poplar, red maple, silver maple, tuliptree, willow, and white ash).

In addition, many trees used in modern landscaping, such as dogwood, redbud, and Bradford pear, are not only historically inappropriate, but are also very short-lived. While the dogwood is a natural understory tree, it often does not do well in full sun – the situation in which many of the cemetery's trees find themselves.

Obviously, there is no such thing as a perfect tree. Many of the historically appropriate species have significant problems as shown in Table 4. At least some of these problems, however, can be overcome through judicious placement, appropriate planning, and careful early pruning.

Replanting

Trees should be replanted as older ones are removed and a general effort should be made to plan for future tree replacement, perhaps using a mix of fast-growing but short-lived trees intermixed with slow-growing but long-lived trees to create a planned appearance.

It is also appropriate to plant replacement trees in anticipation of their need, allowing them an opportunity to become established before the diseased or damaged tree is removed.

Table 4.
Comparison of Historically Appropriate Trees That Might Be Used in the Episcopal Church of the Advent Cemetery

Common Name	Scientific Name	Origin	Cultivation			Size (HxS)	Litter	Breakage	Roots	Notes
			Zone	Light	Drought					
American Ash	*Fraxinus americana*	Native: 1724	3-9A	PS-FS	M	50-80x40-60	Moderate	Weak	Problem	Not tolerant of urban soils or heavy clay.
American Elm	*Ulmus americana*	Native: 1670	2-9	PS-FS	M	70-90x50-70	Moderate	Weak	Problem	Michael Dirr (1998) recommends "Valley Forge," "New Harmony," and Princeton" as respectably disease tolerant.
American Linden	*Tilia americana*	Native: 1752	3-8	PS-FS	M	50-80x35-80	Moderate	Weak	No Problem	Good specimen tree; typically more formal landscape.
Arborvitae	*Thuja occidentalis*	Native: 1536	2-7	PS-FS	M	25-40x10-12	None	Resistant	No Problem	Good screen or hedge plant; not commonly used as a specimen plant.
Eastern Red Cedar	*Juniperus virginiana*	Native: 1664	2-9	PS-FS	H	40-50x10-20	None	Weak	No Problem	Planted for "perfect columnar growth" and traditional cemetery tree.
Post Oak	*Quercus stellata*	Native	6-9A	FS	H	40-50x35-50	Moderate	Resistant	No Problem	Not widely available in nurseries
Red Oak	*Quercus rubra*	Native: 1783	5-8A	FS	H	60-70x50-60	Moderate	Weak	Problem	Not as popular as elm and maple.
Sugar Maple	*Acer saccharum*	Native: 1735	3-8A	S-FS	M	50-80x35-80	None	Resistant	No Problem	Excellent colors through all seasons; frequently used for ornamental plantings.
Weeping Willow	*Salix babylonica*	Exotic: 1730	2-9A	PS-FS	H	45-70x45-70	Moderate	Weak	Problem	Roots are especially aggressive.
White Oak	*Quercus alba*	Native: 1724	3B-8	PS-FS	M	60-100x60-80	Moderate	Resistant	No Problem	A northern oak; was a favored tree, however.

Light: shade, part shade, part sun, full sun; Drought: moderately to highly tolerant; Size shows height x spread in feet; Roots reflect the presence of surface roots or roots that lift sidewalks. Data from USDA, Forest Service Plant Fact Sheets, Adams (2004), and Simonds (1917).

Planting Issues

Locations chosen for planting should not interfere with gravestones, curbing, or fences. Issues of security should also be considered and the use of small trees that obscure eye level views should generally be limited or avoided.

Research is suggesting that trees, especially older mature trees, improve in health when turfgrass is removed under the branch spread and mulch is applied at a depth not exceeding 3 to 4-inches. Fine-textured mulches prevent evaporative water loss better than coarse-textured mulches. This is a practice that could be productively employed at the cemetery, especially under the old, large oak in the center of the property.

Crews should be closely supervised to prevent over mulching of vegetation. It should never exceed 3-4 inches and should never be placed over monuments – as was observed in at least one location (Figure 36).

Figure 36. Example of inappropriate mulch covering a monument.

All replacement trees or new plantings should be of at least 1-inch caliper and meet the minimum requirements of the American Nursery and Landscape Association's American Standard for Nursery Stock (ANSI Z60.1-2004).

All new trees should have water bags installed for the first year of their growth. There are a variety of water bags for young trees, including the Treegator (http://www.treegator.com). In fact, bags are now readily available in big box stores. Young tree trunks can be protected from trimmer and animal damage using rigid tree guards (http://www.amleo.com/tree-bark-protectors/p/VP-BG/).

Tree Maintenance

Maintenance involves at least four basic issues: watering, fertilization, pruning, and pest control.

Watering

The cemetery does not water trees, relying instead on rainfall. While this is typically acceptable, the landscape plan should include provisions for deep-root water during periods of severe drought (assuming this is permissible by local ordinance). This is a critical step necessary to protect the historic landscape fabric of the cemeteries. Using a root feeder without fertilizer, it is possible to apply water 12-inches below the surface. This approach can not only be used during severe drought, but also during extended periods of dry weather during the winter (as long as the temperatures are above freezing).

Fertilization

The church also reports that no tree fertilization is conducted, presumably because of the funds required. Some of the trees (specifically the grand oak in the center of the cemetery and the oaks lining the street) are vital components of the landscape. They represent part of the historic fabric and steps must be taken to protect that aspect of the landscape and vista.

Our soil testing reveals that liming is necessary and many of trees would likely benefit from fertilization. We also recommend that the trees be inspected by a certified arborist (see below). That firm can provide additional fertilization recommendations, but in general fertilization should be conducted on the basis of need as excess fertilization can damage trees; nevertheless, the ISA position is that, "tree fertilization should be done in accordance with ANSI A300 standards" (Lilly 2001:47). These ANSI A300 (Part 2)-1998 standards represent the standard of care of the industry. This is why more proactive involvement by certified arborists in cemetery maintenance is essential.

Fertilization is typically accomplished through deep root fertilization – an approach where the liquid fertilizer is injected into the soil with a probe, usually 6 to 12-inches below the surface at a spacing of about 2 to 3 feet. This process not only provides fertilization, but also some aeration of the soil. An alternative approach uses a drill to excavate holes in a similar pattern which are then filled with a granular fertilizer. Either is acceptable. The ANSI 300 standards allow foliar applications, injections, or implants only when soil application is impractical or ineffective.

It is best to fertilize trees when they are actively growing and have available water to help absorb nutrients. In Spartanburg this is typically from the spring, after new leaves emerge, through mid-season. Fertilizer should not be applied late in the season, during the winter, or during periods of drought.

In a cemetery setting organic fertilizers should be the primary choice. These materials, such as cottonseed meal and bone meal, have much lower salt indices than inorganic fertilizers – resulting in reduced salt uptake by monuments. This is important since salts cause staining, spalling, and deterioration of marbles, sandstones, brick, and even granites. In addition, organic fertilizers have a slower release rate and are easy on the root systems.

Pruning and Hazardous Trees

While we certainly defer to the recommendations of a certified arborist, the trees in the cemetery have a variety of conditions that deserve immediate attention. We are told that there has never before been any professional evaluation of the trees in the cemetery.

Table 5 lists certified arborists in the Athens vicinity that are ISA Certified. The church should require that any tree work conducted in the cemetery be done by one of these firms – or a firm that includes an ISA Certified Arborist. The cemetery trees and surrounding monuments are too valuable to trust to an individual without training, experience, and understanding of tree anatomy.

Table 5.
ISA Certified Arborists within 25 miles

Name	Firm	Address	Phone
Todd A. Kury	Upstate Arborists	212 Shelton Drive, Spartanburg 29307	(864) 921-6464
Joel R. Cox	Forestry Unlimited	110River Ridge Dr, Moore, SC 29369	(864) 706-1495
Randy Cyr	GreenTree	PO Box 6031, Greenville, SC 29606	(864) 233-9422
Andrew J. Long	Plant and Tree Solutions	Greenville, SC 29615	(864) 601-5115
Scott Park	Halesia	25 Ashley Ave, Greenville, SC 29609	(843) 472-0999
Bradley Hudson		217 Briarcliff Dr., Greenville, SC 29607	(864) 325-9692
Jonathan Simmons	Abor Source, Inc	413 Legrand Blvd., Greenville, SC 29607	(864) 723-4839
Jason J. Brown	The Canopy Climber	104 Kincade Dr., Simpsonville, SC 29681	(864) 320-6772

There are a number of trees, most especially

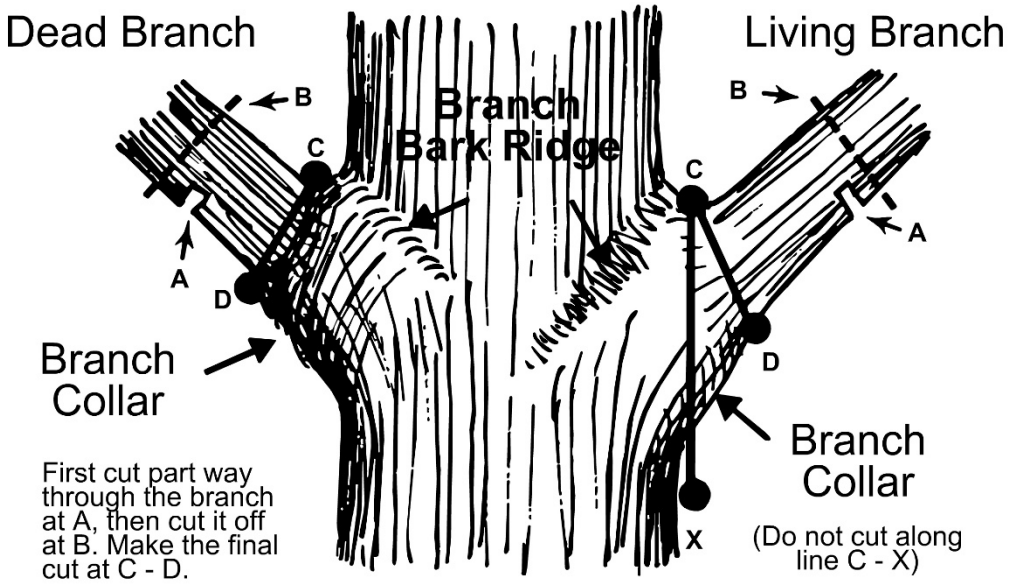


Figure 37. Tree pruning issues. The upper photo shows a tree within the cemetery that has been incorrectly pruned, leaving stubs. The figure below shows correct pruning technique, removing the limb back to the branch collar to allow the wound to heal properly.

Figure 38. Tree problems. Upper left photo shows the grand oak, which needs pruning to thin the canopy, allowing in additional light and air. The upper middle and right photos show trees with dead wood in the canopy which should be pruned out to reduce litter and storm damage. The lower row of photos show a variety of problems in the cemetery dogwoods, including two examples of rot and another with extensive decline and die-back. These dogwoods should be removed and new, replacement trees planted.

the oaks, that require immediate pruning for either thinning or cleaning. Thinning is a technique of pruning that removes selected branches to increase light and air movement through the crown. This also decreases weight on heavy branches. The natural shape of the tree is retained and its overall health is improved.

In cleaning, the pruning removes branches that are dead, dying, diseased, crowded, broken, or otherwise defective. This includes narrow crotches. In the cemetery, this work will also include trees that have been incorrectly pruned in the past, leaving stubs 2 to 4 feet from the collar (Figure 37).

Trees should be pruned in such a manner as to preserve the natural character of the plant and in accordance with ANSI A300 (Part 1) - 2001 standards.

In pruning, branches should always be cut just beyond the branch collar (an extension of the main stem) and not flush with the trunk. Large branches should be removed with three cuts to prevent tearing of the bark which can weaken the branch and lead to disease.

Many of the trees in the cemetery, especially the dogwoods, are in declining health. They evidence rot and are dying from the top. These trees will never again be healthy, even if pruned, watered, and fertilized. They should be immediately removed and new trees planted – with the commitment to ensure their long-term health.

Trees should be inspected for potential threats to monuments, as well as general health. Ideally these inspections should be made yearly and after any storm where the winds exceed 55 mph. They should be pruned to remove potentially hazardous dead wood on a yearly basis, but safe pruning every 5 years by a certified arborist is acceptable. Rigging and/or a crane must be used to minimize the potential for damage to stones or the landscape. Under no circumstances are tree climbers (hooks, spikes, gaffs) to be worn while ascending, descending, or working in trees to be pruned.

We are told that there is some interest in removing the oaks along Advent Street on the west side of the cemetery grounds. We do not believe that these trees require removal. The shedding of dead wood can likely be controlled through careful professional pruning.

Other Landscape Issues

Leaves

We do not know how, or if, leaves are collected during the fall. Without the use of mowers, it is impossible to mulch leaves on-site. It is also not recommended to allow leaves to compost naturally on site in turf areas. Using power equipment to blow leaves to a collection point would result in much soil loss given the extent of bare ground in the cemetery.

Of course, if the area under the grand oak which is in deep shade (see Figure 38, upper left) were mulched, the collection of leaves would not be as significant an issue.

Good mulch and an effort to renew the turf (coupled with appropriate liming and fertilization) would likely create ground cover that would allow the use of blowers to move leaves to a central location where they could be collected and removed. Alternatively, moved to a central location it might be possible to mulch the leaves with mowers using micro mulch blades. This approach would not only eliminate the work of gathering and removing the leaves, but it also would add nutrients back into the soil.

Regardless, we recommend that the cemetery look into how leaves will be handled by the contract landscape firm.

Concrete Plots

A few lot owners have chosen to use concrete in the plot, setting their stones in this material. Sometimes lot owners do this thinking that it will reduce maintenance. Absent

Figure 39. Plot covered in concrete, with monuments set into the concrete.

prohibitions, there is little the church can do. However, this practice endangers the stones and creates a discordant, harsh appearance. We recommend against this practice.

Recommendations

- The church should require a monthly report from the landscape contractor. We have provided a simple report format that may assist.

- We recommend that the landscape firm have employees and managers that are certified by some organization, such as the National Association of Landscape Professionals.

- If uniforms are not provided by the contractor, the church must establish a stringent dress code to ensure the dignity of the cemetery setting. Recommendations include long pants, t-shirts with no writing or pictures, in order to maintain a professional appearance.

- The church should expect the contractor to have an employee code of conduct that focuses on absolute decorum, courtesy, and respect to all individuals in the cemetery at all times.

- Soil tests reveal that many plant nutrients are being affected by the low soil pH and we recommend that the cemetery grounds be limed with dolomitic lime, broadcast prior to a rainfall. Recommendations have also been made regarding appropriate fertilization.

- While use of large deck mowers is impossible in the cemetery, consideration should be given to the use of 21-inch walk behind mowers where there is sufficient room to maneuver.

- Any mowers used must have closed cell foam bumpers installed. These must be replaced as needed. The church should expect operators with excessive wear on the bumpers should be given remedial training and instruction.

- No mowers are to be pushed over stones, especially ledgers, coping, or walls.

- Mowing must be conducted with sufficient frequency to maintain turf at a height of 1½-inches. This typically requires mowing at two-week intervals during the growing season.

- The line weight used on trimmers should not exceed 0.065-inch.

- Grass clippings must be blown off all monuments after every mowing or trimming.

- The centipede turf exhibits extensive weed invasion. The cemetery should institute a weed control program, using pre- and post-emergent herbicides.

- Lawn renovation should be undertaken in areas of bare soil, moss, and compacted soil.

- Core aeration should be conducted in selected areas of the cemetery, focusing on compacted areas, bare soil areas, and moss covered areas.

- The church should further explore leaf management in the cemetery.

- The church should prohibit the creation of concrete or graveled plots.

- All weedy plants and vines must be removed from cemetery shrubs and planting beds. These shrubs and planting areas must be inspected on at least a six-month basis to ensure they remain clear of intrusive vegetation.

- All shrubs must be pruned by hand. Shearing must not be allowed.

- All landscape technicians must be trained on appropriate pruning techniques for the common shrubs in the cemetery.

- When shrubs require replacement, they should be replaced in kind. All plantings should meet the minimum requirements of the American Nursery and Landscape Association's American Standard for Nursery Stock (ANSI Z60.1-2004). All nursery stock should be carefully inspected prior to acceptance and planting.

- Trees to be planted on cemetery grounds must be carefully identified to be historically appropriate and to avoid significant issues such as surface roots, excessive litter, or weak structure. A list of potential plantings is provided.

- Every tree removed should be replaced by a new tree. It is also appropriate to plant replacement trees in anticipation of their need.

- All replacement trees or new plantings should be at least 1-inch caliper and meet the minimum requirements of the American Nursery and Landscape Association's American Standard for Nursery Stock (ANSI Z60.1-2004). All nursery stock should be carefully inspected prior to acceptance and planting.

- All new plantings should have water bags and rigid tree guards installed.

- Minimally, the grand oak in the cemetery should have turf removed from under its drip lines and 3-inches of mulch installed. Reduction in soil compaction is also appropriate.

- There are several trees in the cemetery that require pruning for either thinning or cleaning. Pruning should preserve the natural character of the tree. All pruning must meet the ANSI A300(Part 1) – 2001 standards.

- All pruning within the cemetery grounds should be performed by an ISA Certified Arborist. We have provided a list of ISA Certified Arborists for the church to use.

- All trees must be inspected by an ISA Certified Arborist on a yearly basis and after any significant wind storm.

- All cemetery trees must be pruned to remove dead wood at no greater than five year intervals.

- Plantings, whether voluntary or intentional, that interfere with stones or fences must be evaluated on a case-by-case basis to determine appropriate remedies.

Other Maintenance Issues

This section briefly explores other cemetery maintenance concerns exclusive of the landscape. We will briefly discuss signage issues, trash and debris, flowers and grave decorations, policies dealing with orphan stones and replacement stones, drain cleaning, grave preparation and closure issues, and monument setting.

Signage

At the present time the cemetery does not have any signage. This may be at least partially because the church has failed to develop any rules for the cemetery except wording for deeds and to require monuments be approved by the vestry (Bylaws Revised January 17, 199, Article 10, Sections 1 and 2).

From a cemetery preservation perspective signage is of four basic types: identification, regulatory, informational, and interpretative. They are generally recommended in this same priority.

Identification signage might include the name of the cemetery and might also include the cemetery's date of founding and historic significance (i.e., listed on the National Register). We do note that such a sign has been mounted to the church, but it makes no reference to the cemetery.

Regulatory signage specifies laws, regulations, or expected standards of behavior.

The last two types of signage are informational (for example, directional signs) and interpretative (information on historic people buried in the cemetery). While these are excellent and improve the visitor experience, none are necessary at this point, but they may be added in the future.

The Cemetery must strive to develop effective and well-designed signage. Signage should combine good and consistent design, and meet the needs of visitors.

Specifically, the signage should provide consistent information; should be universally accessible; viewable by several people at once; and be very durable and able to withstand abuse or constant touching. Signage should be located near entrances and at major circulation intersections.

Identification Signage

The proximity of the cemetery to the church and the immediately visible cemetery make identification signage less important than it usually is. At some point it would be appropriate to place a sign that includes one or two brief sentences on the history of the history at the front entrance path, to the right (south) of the church.

Regulatory Signage

There is no regulatory signage at the present. Developing and installing such signage is of critical importance. Figure 40 provides a list of what we consider to be the most critical regulations for the cemetery.

This sign should be installed at the front entrance path, to the right (south) of the church. An additional sign should be installed at the southeast entrance to the cemetery on the left (west) side of the path. This will help ensure that visitors, regardless of entrance point know what is expected of them during their visit.

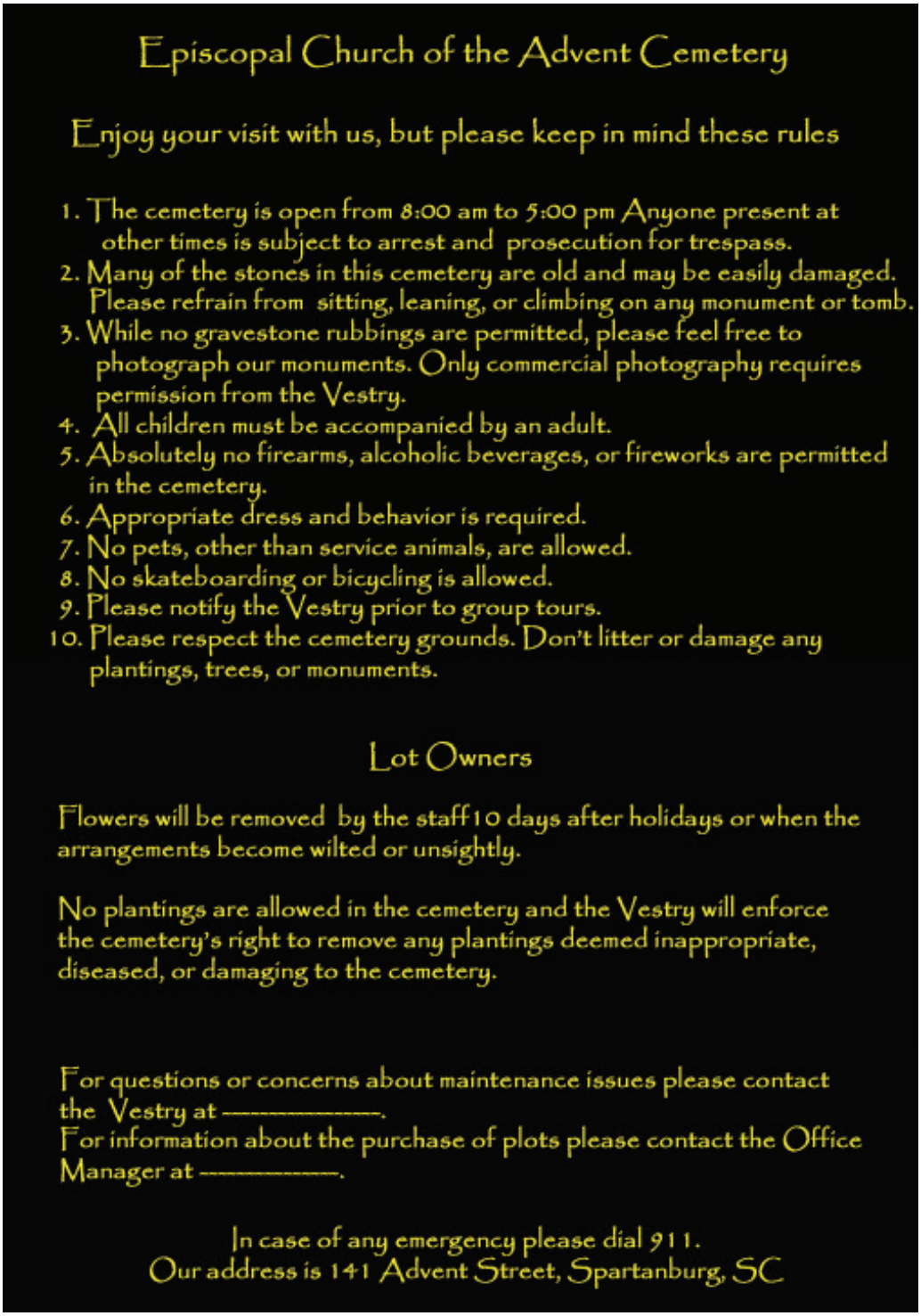


Figure 40. Recommended front and rear path regulatory signage for the cemetery.

Flowers and Other Grave Decorations

We have identified no flower regulations at all at the cemetery, although we also failed to observe any graves with flowers during our visit. While Figure 40 provides our most generic recommendation, this issue deserves additional discussion so the Archives Committee will fully understand our concerns.

Often arrangements, of whatever type, are set in front of monuments. Each arrangement must be picked up, the area mowed or trimmed, and the arrangement replaced. This dramatically increases the level of maintenance necessary.

In addition, we have very often found more than a few arrangements that were long-past their prime. This detracts from the dignity and beauty of the cemetery. This will allow staff to remove faded flowers, Christmas decorations after the holidays, and so forth. Removing flowers 10 days after established holidays is a reasonable – and common – period of commemoration. For private holidays, removing arrangements when they are wilted or unsightly, allows the cemetery to maintain order while still respecting families' rights.

Grave decorations were not, at present, found in the Church of the Advent Cemetery. However, many cemeteries are beginning to struggle with the increasing tendency for the public to load graves with personal items. This problem is not unique to the United States, but has also been documented in Great Britain, where solar-powered lights, statues and windmills have appeared.

Some cemeteries have established rules based entirely on appearances. At times these are intentionally vague, for instance referring to "adornments considered offensive or otherwise inconsistent with the dignity of the cemetery." In other cases, a fairly detailed list of objectionable items has been devised: "Toys, stuffed or otherwise manufactured or sculptured animals, statues or statuettes, personal items and/or other unsightly objects."

Although aesthetics may reasonably be considered to suffer, most cemeteries attempt to control the proliferation on the grounds of the potential hazard to workers – a legitimate concern considering the use of mowers and trimmers on a routine basis.

Many cemeteries enact provisions that allow staff to remove such objects ("temporary objects") when they become withered, unsightly, or an obstruction to maintenance. Other cemeteries exclude all objects made of concrete, glass, plastic, fiberglass, metal, ceramic, and wood, again with the justification of safety. And additional cemeteries prohibit objects that tend to increase maintenance efforts, such as bird feeders, statuary, and concrete pots.

While wishing to be sensitive to those who have lost loved ones, there must still be a middle ground that helps control the abundance of materials beginning to appear on graves throughout the country.

Trash and Debris

Although trash does not seem to be a significant a problem at this cemetery as it is in many city cemeteries, we did observe abundant downed limbs. We further understand that the current landscape crew does not routinely clean limbs in all areas. We also noticed that there was no readily available trash can in the cemetery.

It is critical that the landscape crew make a pass through the cemetery prior to mowing or trimming. They should be responsible for collecting all trash, downed limbs, and other debris.

It may be that the cemetery has so few visitors at present that a trash can would cause more maintenance problems than it would solve. The church, however, should periodically revisit this issue, especially if an increase in trash is noticed.

The chosen containers should blend in with the surroundings, but it is not necessary to purchase "historic replicas" since they would likely appear out of place. The chosen containers should be durable and long lasting. Concrete, stainless steel, or powder coated steel are good options. They should have locking lids to keep trash in and minimize loss. The containers should be permanently mounted to prevent theft and damage.

Figure 41. Orphan stones. Are these stones associated with graves or are they orphan or replaced stones?

Lost and Orphan Stones

Every cemetery has stones that are no longer associated with their grave. Good management requires that these stones be documented, collected and an effort made to return them to their proper locations. Long-term storage or simply ignoring them is inappropriate.

Stones should never be allowed to be removed from their original location without full documentation – where was the stone found, why is it being removed, where is it being stored, what should be done to reset the stone, what action is being taken to resolve the issue. Staff must understand that once a stone is separated from the grave, the potential that the grave will become lost – regardless of the quality of the cemetery records – dramatically increases. Thus, every effort should be made to ensure that stones remain on their grave.

Good examples of this problem can be

found when examining the four markers beneath the overhanging church building on the west side of the cemetery.

- A lawn marker for Dr. James Nott Moore (1837-1902) seems to be the same as a larger stone located just outside the area.
- The stone for Irwine Twitty seems to be for the same person as a marker for Irwine Twitty (1859-1989!) in the southeast corner of Section 4.
- A stone that appears to be an orphan stone seems instead to be a discarded building or landscape stone.

Cemeteries should also develop a clear policy on replacement stones. Every effort should be made to ensure that historic stones are repaired, not replaced. Where replacement is essential, the new stone should be consistent with the dominant style in that section. For example, where marble dominates, the replacement stone should be marble.

Where a new stone is desired to improve legibility, it is good practice to maintain the historic stone and inscribe an exact transcription on a granite stone to be laid flat in front of the old stone. This retains the historic fabric and ensures that the three-dimensional appearance of the plot is not altered, while allowing the family to ensure the grave is made legible.

Quality of the 1999 Todd Map

It is critical that the church update and correct this map. We used it during our assessment and found a variety of issues.

- The placement of some markers is incorrect.
- There are numerous misspellings and incorrect dates.
- The map has never been updated to show landscape and monument changes (for example, the Memorial Garden is not shown).
- Where more than one individual is listed on a marker, the map indicates there are multiple markers, one for each name (for example, Section 3, Markers 21, 22, 23 are actually one large marker). This is a result of inexperience and confusing “graves” with “monuments.”

We recommend that a new map be prepared, perhaps coupled with photographing each monument.

Drainage

We identified six drains in the cemetery. It appears that all are intended to collect and remove roof drainage. Five are around the church building and the sixth is in the southeast corner of the cemetery, perhaps serving the office building. However, like many cemeteries with no detailed plans, no one actually knows their function, if or how they are connected, or to where they drain.

Our brief inspection found it impossible to ascertain the direct of flow. Most of the drains have several ca. 5-inch PVC pipes entering and exiting the catch basins.

In addition, no one remembers these drains ever being cleaned. Since most are in areas dominated by soil, it seems likely that a good deal of sand, if not vegetation, has flowed into these drains over the years.

Catch basin sumps need periodic cleaning. Sediment and heavy debris can collect in the sump over long periods of time. The sediment can accumulate to the level where it restricts the outlet flow. These sumps should be cleaned at least once a year.

These will require snaking or the use of a high pressure water jetting device (with pressures


Figure 42. Drain in the cemetery.

of up to 4,000 psi and the capability to extend up to 500 feet) by a company that specializes in this work. Clean out snakes are not recommended for corrugated pipe and extreme care will be necessary to prevent breakage of the drain pipes. It may also be necessary to use an inspection camera to obtain a better idea of the degree and nature of the clogs.

As this is being done it will be worthwhile to also roughly plot the location of the buried drains. The drain cleaners should snake the drainpipes until the snake won't go any farther. Using an underground pipe or metal detector it should be possible to trace the location of the snake – and the drain.

The location of the drains and the associated runs should be included in the Cemetery's GIS mapping layers for future reference.

Grave Opening and Closing Issues

As briefly discussed in the Administrative comments, we are aware that few additional burials are anticipated in the cemetery. However, there seems to be no policy concerning the process involved. We agree that it is troubling to spend much time developing policies that will be used only once or twice. However, the church needs to consider these issues when they have the time and opportunity to make sound, reasoned judgments, not when the pressure of a funeral weighs heavy.

The first issue that must be considered is the whether an individual is entitled to burial in the churchyard. We presume that a valid deed is required.

The second issue is whether the grave is, in fact, empty. This of course also involves liability should excavation begin and human remains be found. While funeral homes may use probes to ascertain the presence or absence of a burial, this is not a precise effort. Nor is the use of ground penetrating radar, especially if graves are old and tree roots are numerous. Therefore, the church should work with an attorney to transfer liability to the descendant's family. Without someone accepting the liability, we do not recommend any burial take place.

The third issue is how the grave will be excavated. In some areas it may be possible to maneuver small track hoe equipment. But there is, again, the issue of liability. Who will be responsible for damage to the landscape, damage to other monuments, or damage to coping? Someone or some firm must be responsible for "making right" any and all damages. Many of these problems could be mitigated by insisting that all burials be excavated by hand, with all soil moved off-site by wheelbarrow.

The fourth issue is whether the church will allow burials without the use of a vault. If a vault is required, there must be some means for accessing the grave – presenting the same problems inherent in the use of mechanical equipment for grave excavation. If a vault is not used, eventually (even if a metal casket is used), the grave will collapse and will need to be refilled.

The fifth issue is whether the church has in place policies to ensure that sod is laid on the bare soil. It is unacceptable to leave bare soil on graves as this is not only poor customer service, but it serves to diminish the appearance of the cemetery.

Clearly, the easiest approach would be to deny any future burials and either purchase back open plots or trade plots for a niche. An alternative might be to allow in-earth burial on a plot, but only of cremains (which require less space and depth). Whatever decision the church makes, it is essential that all of these issues be resolved as soon as possible.

Setting Monuments

While the church demands that monuments be approved by the Vestry, no mention is made of what review criteria will be used, especially in the context of setting.

We have found that commercial monument firms are often very lax in how they set monuments. They may use only a few inches of dry concrete as their foundation, for example. This practice exhibits several significant problems.

First, a 3-inch foundation fails to penetrate the frost line in the Spartanburg area and no matter how stable the concrete, it will be subject to damage from frost action, specifically heaving and thaw weakening. This is a particularly significant problem when the soils are silty – such as the red clays in the cemetery. The minimum depth of foundations at the cemetery should be 12-inches.

Second, regardless of the foundation depth, dry pours without added water will result in a mix with low compressive strength and high porosity. The low compressive strength will result in the footing being more easily damaged by frost heave or thawing, as well as by tree roots or animal burrowing. In other words, it will crack and deteriorate, causing the monument to sink or tilt – creating future preservation concerns. The higher porosity will result in additional moisture wicking into the monument which in turn will increase the potential for damage to the monument from freeze-thaw or salt intake.

Third, the described setting practice is specifically contradicted by the Elberton Granite Association in its publication, *Techniques for Erecting Granite Monuments*. The monument association identifies multiple problems with many common techniques. The most significant problem is the impact the approach has on the granite itself,

> Cement is alkaline in nature, and the stone alkalis present in cement can be as harsh as strong acids to a porous material like granite. Portland cement, before treatment with water, consists of a mixture of calcium silicates and calcium aluminate. When treated with water, the calcium aluminate hydrolyzes, forming calcium hydroxide and aluminum hydroxide. These hydroxides can have corrosive effects such as the familiar Red Devil lye, which is a sodium hydroxide (E.G.A. Certified Memorials Program n.d.:2)

The report also notes that porous cements

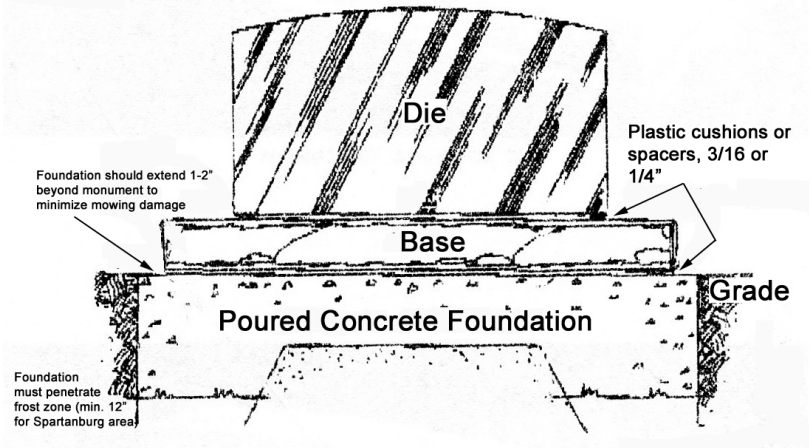


Figure 43. Proper setting of a monument (adapted from *Techniques for Erecting Granite Monuments*).

will "transmit ground water, along with water-soluble acids and other impurities from the soil, through its pores by capillary action into the granite itself." This will cause "darkening of the granite."

Figure 43 illustrates the foundation suggested by the association – clearly establishing an adequate footing below the frost line.

Substandard setting practices are a problem for the cemetery. Not only will monuments not be set as recommended by the leading granite monument association, but ineffective foundations being used will cause monuments to tilt – resulting in significant future maintenance for the cemetery.

The church should establish meaningful standards for foundations, and the supervision provided by the cemetery of settings should carefully ensure that these standards are consistently met. The standards document should incorporate the following critical elements:

1. The foundation shall be centered in relationship to the grave or lot. The gravesite lot shall be physically probed, marked, and laid out in order to make this determination.

2. Where a single marker or headstone is to be used to commemorate two or more gravesites, the foundation shall be centered between the gravesites to the extent possible.

3. All foundations shall be laid out so that the markers or headstones, including the visual presentation of inscriptions, will be in alignment with other foundations or markers or headstones in the same lot row.

4. The measurements of the foundation excavation shall be four-inches (4") wider than the width of the marker or headstone and four-inches (4") longer than the length of the marker or headstone in order that a foundation border of two-inches (2") will extend beyond the entire length and width of the marker or headstone after it has been installed.

5. Excavation for the foundations of markers or headstones that lie flat with the ground surface shall be dug at a depth of at least twelve-inches (12") to penetrate below the frost line. The burden of proof for compliance with different standards shall be on the party responsible for each installation and must be approved by the church on a case-by-case basis.

6. Preparation of the foundation for any marker or headstone to be placed on any gravesite in the cemetery and the subsequent installation shall be scheduled by email, writing, or fax with the proper Cemetery representative.

7. Scheduling of foundation preparation and installation for any marker or headstone shall be based on weather and ground conditions, other burial services in the cemetery and the availability of personnel to inspect the foundation preparation and installation of a marker or headstone.

8. The completion of a foundation shall be two-inches (2") above ground level and not detract from the appearance of gravesites in the cemetery. Removal of excavated dirt and clean-up of the gravesite shall be performed promptly by the party preparing the foundation and installing the marker or headstone.

9. No marker may be set into wet concrete. All foundations must be cured at least two-weeks (14-days) prior to setting of monuments.

10. Markers will be required to have the section and site engraved on the headstone for easy site placement, and identification. The cost of the inscription will be borne by the proprietor - owner of the headstone.

Memory Garden and Scattering Garden

Figure 44 illustrates a bench that has been erected in a garden dedicated to the memory of two individuals. Clearly this garden is receiving little maintenance, at least given its appearance at the time of our assessment.

Figure 44. Condition of the existing "memory garden". The upper photo shows the bench with the inscription that the garden is in the memory of two individuals. The lower photo shows the weedy, untended appearance of this space.

This illustrates a sad reality. It is far easier for families to erect a bench and pay for some plants than it is to maintain those items in perpetuity. The church must resist efforts to establish hardscape or softscape for which it has no funds or will to maintain.

This serves as a prelude to a few comments concerning the Vestry's thought to establish a scattering garden for cremains. If it has not been possible to maintain a "memory garden," with far less long-term requirements, much more careful consideration must be given to the dedication of land for the scattering of cremains.

Scattering gardens are generally just that – gardens with mature trees and winding paths of perennial flowers. They seek to create a picture of peace and serenity. In fact, cemeteries which offer this tend to take pride in having meticulously landscaped gardens which receive perpetual maintenance and year-round flowering plantings.

There are often memorials at different locations, so a name plate can be attached to the nearest location of the scattering. Sometimes "scattering" is not literal, with the ashes deposited in a below-ground vault. At other times there are requirements that they be raked into the soil and then covered with mulch.

As we indicated, scattering gardens are not an area of expertise for us, but we would caution the church that offering such a service creates a perpetual commitment and a requirement for an exceptionally high level of maintenance. It should not be entered into until other issues are fully resolved and the church determines that it can perform successfully in this field.

Recommendations

- A sign theme should be developed for the Cemetery using consistent colors and type faces.

- Identification signage can be developed in the future and erected at the entrance of the cemetery to the right of the church.

- Regulatory signage is critical and should be erected at the two main entrances. Suggestions for the minimal regulations have been provided.

- The church should establish a policy that all flowers or arrangements will be removed by staff 10 days after holidays or when the arrangements become unsightly.

- The church should establish a policy that allows staff to remove all "temporary objects" on graves or in plots when they become withered, unsightly, or an obstruction to maintenance.

- The landscape contractor must be responsible for collecting and disposing of trash and debris prior to mowing.

- The church may, in the future, benefit from a vandal resistant trash receptacle close to its entrance.

- The Todd map includes a variety of errors and has never been updated. All names, dates, and locations should be carefully checked and new monuments should be added. Landscape features should be updated.

- "Orphan" stones should be documented and collected for short-term safe keeping until their appropriate location is identified through research. In so far as possible, stones should not be allowed to become disassociated with their graves as this effectively loses the grave location.

- The church should help preserve the historic context of the Cemetery by ensuring stones are repaired rather than being replaced. Where a new stone is desired to improve legibility, it is good practice to maintain the historic stone and inscribe an exact transcription on a granite stone to be laid flat in front of the old stone.

- Drainage sumps or collection basins should be cleaned of trash, leaves, and silt yearly.

- Below grade drains may never have been cleaned and should be carefully inspected. They may require cleaning using a snake or a high pressure water jetting device. During this operation the drain line locations should be documented using a metal detector so the lines can be added to a cemetery map.

- The church must carefully evaluate all of the issues involved in opening and closing graves in the cemetery. This includes how deeds will be verified, how grave availability will be verified, who will assume liability in the case human remains are identified, how the grave will be dug and backfilled, and whether a vault will be required. Alternatives may include offering a niche in trade for the plot or offering in-ground burial of cremains.

- The church has no specifications for setting of monuments. We have proposed specifications that will ensure monuments are correctly set and the cemetery will not be burdened with future sinking and tilting problems.

- The memory garden on the west side of the church is being poorly maintained and requires immediate, extensive care, renovation, and improvement.

- The church should evaluate very carefully the long-term maintenance associated with a scattering garden. We do not recommend opening such an area until other maintenance issues are satisfactorily resolved.

Conservation Issues

In the introduction to this plan we briefly discussed a variety of preservation issues, tackling the question of why it is important to preserve sites like the Episcopal Church of the Advent Cemetery and introducing the reader to the Secretary of Interior's Standards for Preservation. Readers may want to refer back to those discussions since they form a foundation for our discussion of the conservation needs at the cemetery.

Standards for Conservation Work

The Vestry is the steward of this cemetery, holding what belonged to past generations in trust for future generations. As such these individuals bear a great responsibility for ensuring that no harm comes to the property during their watch.

One way to ensure the long-term preservation of the cemetery is to ensure that all work meets or exceeds the Secretary of the Interior's Standards for Preservation, discussed on pages 17-18 of this study.

Another critical requirement is that the church ensure that any work performed in the cemetery be conducted by a trained conservator who subscribes to the Guidelines for Practice and Code of Ethics of the American Institute for Conservation of Historic and Artistic Works (AIC) (http://www.nps.gov/training/tel/Guides/HPS1022_AIC_Code_of_Ethics.pdf).

These standards cover such issues as:

- Respect the original fabric and retain as much as possible – don't replace it needlessly.
- Ensure that the treatment chosen is suitable for the object, recognizing that at times no treatment is the best option.
- Choose the gentlest and least invasive methods possible.
- Is the treatment reversible? Is retreatment possible?
- Don't use a chemical without understanding its effect on the object and future treatments.
- Don't falsify the object by using designs or materials that imply the artifact is older than it is.
- Replication and repairs should be identified as modern so that future researchers are not misled.
- Use methods and materials that do not impede future investigation.
- Document all conservation activities and ensure that documentation is available.
- Use preventative methods whenever possible – be proactive, not reactive.

The AIC Code and Guidelines also require a professional conservator provide clients with a written, detailed treatment proposal prior to undertaking any repairs; once repairs or treatments are completed, the conservator must provide the client with a written, detailed treatment report that specifies precisely what was done and the materials used. The conservator must ensure the suitability of materials and methods –

judging and evaluating the multitude of possible treatment options to arrive at the best recommendation for a particular object.

These Guidelines of Practice and Code of Ethics place a much higher standard on AIC conservators than individuals or commercial monument companies that offer "restoration services." This higher standard, however, helps ensure that the Episcopal Church of the Advent Cemetery receives the very best possible care and that the treatments conducted are appropriate and safe.

The Responsibility of the Church

It is reasonable to expect, even demand, that extant families with still active plots in the cemetery take responsibility for the maintenance of their monuments, coping, and other lot features. Of course, this presupposes that actions or inactions by the church have not contributed to the failures and deteriorations of the plots. For example, if the problems were caused by a falling tree that was clearly unhealthy or even dead, then the church would be responsible.

This should provide the church with ample reason to improve maintenance, provide better oversight of landscape staff, and establish clear maintenance policies.

There are, however, many plots where families can no longer be located or may not even exist. What then? Is it reasonable to ignore these plots and monuments, allowing them to deteriorate, causing hazards and liability for the cemetery and church?

Ignoring deterioration affects the entire cemetery, making it a less attractive – and safe – place. Moreover, it ignores that the church is the steward of the cemetery, holding and maintaining it for future generations.

Past Conservation Efforts

The assessment identified only a few stones which exhibit previous repairs. All of these repairs are types that were commonly used by individuals or commercial monument companies. They appear to be using Portland cement, which is too hard and too inflexible for marble or involve lying the marker flat on the ground, which affects the three-dimensional nature of the cemetery and subjects the stone to additional acid rain and pedestrian damage.

The church does not have any repair documentation for these monuments, so it is unclear if the work was done with the church's knowledge or not.

Figure 45. Examples of previous repairs in the cemetery. On the left is a cross with two breaks, probably repaired with a white Portland cement. On the right is a tab in base broken in two locations and missing its tab, laid flat on a OPC slab.

Table 6.
Monument Problems in the Cemetery

Section	Broken	Ferrous Pin/Iron Jacking	Sinking	Loose on Base	Severely Tilted	Missing Die	Previous Repairs
Section 1			6		2		
Section 2	1		8		2	1	2
Section 3	1	1	2	2	1	2	3
Section 4		2	3	2	3		3

General Types of Stone Damage

Although a stone-by-stone assessment was not included in this assessment, it is possible to provide some general observations concerning the types of problems faced by the cemetery. These discussions provide general observations that will help place the recommendations in a broader context. Table 6 identifies problem by section (based on the 1999 Todd map) and it is worth noting that there is actually relatively little damage in the cemetery and this is excellent.

Sinking and Tilted Monuments

The single greatest problem in the cemetery is the inadequacy of monument foundations or gradual shifting of tablets, probably as the grave collapsed. This is a problem found in every section and at least 27 monuments require intervention through resetting. This is a significant, long-term problem for the cemetery since as stones sink they become more likely to topple. As they topple not only is the appearance of the cemetery dramatically altered, but the monuments can present a significant liability. In addition, as monuments topple they are very likely to hit coping, walks or other stones, causing damage to themselves or the objects they hit. This dramatically increases repair costs.

The solution involves the resetting of these monuments, prior to their further collapse, coupled with periodic inspections looking for additional, similar problems.

Simple Resetting

A large number of stones in the cemetery require resetting. Many of these are flush-to-ground lawn markers or tablets that have sunk and are now either tilted or being covered with soil and grass. Resetting is generally simple and a suitable task for volunteers.

The stone should be excavated, being careful to avoid shovel damage. There are some monuments that have been set in concrete and the removal of this material may require a conservator to ensure that the stone itself isn't damaged. Otherwise, the hole can be deepened and filled with pea gravel or decomposed granite as bedding. The lawn marker should be reset about 1 inch above the ground level – tall enough to prevent being covered by soil and grass, but not so tall that it will be damaged by mowing. Tablets should be set with about 25 to 33% of the stone below grade. Additional pea gravel should be packed in around the stone as it is being leveled. The upper inch of backfill should be soil to allow for revegetation.

It is critical that Portland cement never be used to reset stones since it removes their ability to shift if they are accidently hit by mowing or other landscape activities.

Cradle Graves

Cradle graves, also called bedstead monuments, are combinations of headstones and footstones connected by side rails, giving the appearance of a bed. Historically these were often planted in flowers or groundcover.

Resetting cradle graves is more difficult and time consuming then other monument types, but involves essentially the same techniques. The individual parts were typically connected by ferrous or brass pins. These fail as the grave shaft collapses and individual components begin sinking or tilting.

The first step is removal of the individual components and infilling the grave with

Figure 46. Examples of stones requiring conservation treatment. Upper row left shows a badly tilted stone. Upper right shows a sinking lawn marker. Middle left shows three cradle graves that are broken, displaced, and sinking. Middle right shows a broken tab in socket stone. The lower photos show two die on base markers attached using ferrous pins that have corroded and caused damage to the monuments.

decomposed granite in order to establish a good foundation for rebuilding the monument. If all of the parts are intact, they are simply reset as described in the above sections.

If the side rails are broken, which is unfortunately common once they are exposed, then the monument requires conservation treatment.

Loose Monuments

There are at least four loose monuments (sadly, the majority have been reset in concrete). These are typically die on base markers where the monument company failed to insert a pin to stabilize the two parts (the die and the base). These monuments remain upright through gravity and consequently pose a significant threat to the public, other monuments, and themselves.

For such monuments we recommend drilling and pining to improve stability and reduce the cemetery's liability.

Broken Stones

There are several examples of broken stones. Leaving these stones laying on the ground or leaning against other stones subjects them to additional damage, increasing the eventual cost of appropriate repair. Stones on the ground are walked on, may have mowers run over them, and if they are marble, are subject to greater acid rain damage. It is always critical to erect fallen stones and this simple resetting is an activity that volunteers could undertake.

This cemetery is quite fortunate that there have been relatively few past repair efforts using inappropriate repair techniques or materials (other than resetting with concrete). It is always far easier to conduct an appropriate conservation treatment than to "undo" inappropriate actions, such as the use of "simple epoxy" repairs – where stone fragments are joined using a continuous bead of epoxy. Experience indicates that for a long-lasting repair, particularly in structural applications, use of pins is necessary. Moreover, most adhesives are far stronger than the stone itself, meaning that failure of the repair is likely to cause additional damage to the stone.

Appropriate conservation treatment requires a blind pin repair. This drilling and pinning is a process that involves carefully aligning the fragments, drilling the stones, and setting fiberglass, or occasionally threaded 316 stainless steel rod, using a structural epoxy in the drill holes.

Diameters and lengths of pins vary with the individual application, depending on the nature of the break, the thickness of the stone, its condition, and its expected post-repair treatment. The choice of epoxy depends on the required strength, among other factors.

Since there is also usually some loss of fabric along the break, this treatment will also involve infilling areas of loss with a compatible mortar. This consists of a natural cementitious composite stone material resembling the original as closely as possible in texture, color, porosity, and strength. This type of repair may be used to fill gaps or losses in marble.

Under no circumstances should latex or acrylic modified materials be used in composite stone repair. These additives may help the workability of the product, but they have the potential to cause long-term problems. Such products are not appropriately matched in terms of strength or vapor permeability.

More suitable materials include Jahn (distributed by Cathedral Stone) or the lime-based mortars of U.S. Heritage. These closely resemble the natural strength of the original stone, contain no synthetic polymers, exhibit good adhesion, and can be color matched if necessary.

Drilling stones is a complex treatment that should only be conducted by a trained conservator. Infill is similarly complex and the Jahn products require certification in their use through Cathedral Stone.

Table 7.
Comparison of Different Cleaning Techniques

Cleaning Technique	Potential Harm to Stone	Health/Safety Issues
Sand Blasting	Erodes stone; highly abrasive; will destroy detail and lettering over time.	Exposure to marble dust is a source of the fatal lung disease silicosis.
Pressure Washers	High pressure abrades stone. This can be exacerbated by inexperienced users. Pressures should not exceed 90 psi.	None, unless chemicals are added or high temperature water is used.
Acid Cleaning	Creates an unnatural surface on the stone; deposits iron compounds that will stain the stone; deposits soluble salts that damage the stone.	Acids are highly corrosive, requiring personal protective equipment under mandatory OSHA laws; may kill grass and surrounding vegetation.
Sodium Hypochlorite & Calcium Hypochlorite (household and swimming pool bleach)	Will form soluble salts, which will reappear as whitish efflorescence; can cause yellowing; some salts are acidic.	Respiratory irritant; can cause eye injury; strong oxidizer; can decompose to hazardous gasses.
Hydrogen Peroxide	Often causes distinctive reddish discolorations; will etch polished marble and limestone.	Severe skin and eye irritant.
Ammonium Hydroxide	Repeated use may lead to discoloration through precipitation of hydroxides.	Respiratory, skin, and eye irritant.
D/2 Architectural Antimicrobial	No known adverse effects, has been in use for nearly 15 years.	No special precautions required for use, handling, or storage.

Ferrous Pins

Several die on base stones were observed that had been set using ferrous pins to join the die and base and this has caused cracking as the ferrous pin expands with corrosion (called “iron jacking”). These stones should be given a high treatment priority since, left untreated, the corrosion of the ferrous pin continue to cause damage and increase eventual repair costs.

It is necessary to use diamond core drills to remove the corroded ferrous pins and replace them with either fiberglass or, rarely, stainless steel. Afterwards it is necessary to fill the voids with a natural cementitious composite stone material such as that previously described for infill repairs.

In some cases, the iron pins have already caused the stone to spall. Treatment is similar, except that the replacement pins must often be longer and inserted into stone that is still capable of bearing the weight of the monument. Such repairs also necessitate major reproduction of lost stone and therefore are more time consuming and expensive.

Cleaning

Many of the stones exhibit relatively dense deposits of lichen (a symbiotic association typically between fungus and green algae) or algae alone. While sometimes viewed as only an aesthetic issue, there are many stones in the cemetery where the biologicals have become so thick that the carving on the stone is today difficult to read. These biologicals may damage stone in a variety of additional ways. As lichen and other plants grow, they can exert pressure on the mineral grains, weakening the intergranular structure. Some organisms produce acid compounds that dissolve the calcium carbonate. Some can even etch granite. Many of the lichen and algae allow water to migrate into cracks and crevices of the stone, leading to freeze-thaw damage.

While cleaning is often recommended, inappropriate cleaning can result in a significant amount of damage. Table 7 lists problems with a variety of “common” stone cleaning processes widely used by commercial firms and the public. This information is important to the church and

Figure 47. Example of heavy lichen growth.

should also be made available to any families that may inquire about cleaning their specific monuments.

A suitable biocide for cleaning stones is D/2 Biological Solution (http://d2bio.com/) available from a variety of conservation suppliers. Stones should always be prewetted prior to application of D/2 and after dwelling for a few minutes followed by gentle scrubbing, should be flushed from the stone.

Plot Fence

Only one iron fence is present in the cemetery and it is in reasonably sound condition. Clearly it was much loved in the past as comparison with historic photographs reveal that the fence was altered at some point to avoid a now dead and removed tree.

At some point in the near future this fence will require repainting. Painting is the single best long-term preservation mechanism for fences – and it is one of the least expensive options.

It should first be examined for open joints and other areas where water can penetrate through capillary action. These areas should be carefully caulked with Sikaflex 1a, an elastomeric caulk that is often used in fence repair. Under no circumstance should a silicon caulk be used.

We generally do not recommend anything more than brushing of the fence to remove loose corrosion and flaking paint. The entire fence should then receive one coat of an alkyd primer, such as Rust Oleum Professional High Performance Metal Primer 7769. After this has cured it should be followed by two top coats of flat black alkyd paint, such as Rust Oleum Professional High Performance Flat Black 7776402.

Paint application should be by brush, producing initial dry coat of 1-2 mils (the wet build-up is typically twice this).

Recommendations

- The church must require that all work performed in the cemetery on monuments, fences, or walls be conducted or overseen by a trained conservator who subscribes to the Guidelines for Practice and Code of Ethics of the American Institute for Conservation of Historic and Artistic Works (AIC).

- While a stone-by-stone assessment might further refine stone treatment priorities, this assessment found relatively few stones with significant problems. The most troubling are those with iron jacking since, left untreated, these stones will rapidly join the ranks of those that are broken.

- The cleaning of the worst soiled stones in the cemetery using D/2 Biological Solution could be undertaken by volunteers. This will dramatically improve overall appearance and provide a very visible improvement to the cemetery landscape.

- The iron plot fence should be scheduled for maintenance, including sealing joints and painting.

Priorities

The Episcopal Church of the Advent Cemetery has not always been well cared for. We suspect that various building episodes have covered some graves. The cedars have died and not been replaced. There are damaged stones. Landscape maintenance is definitely sub-par. Yet, the cemetery does not exhibit much of the damage that we see so often in cemeteries of comparable age.

Perhaps of even greater importance, the cemetery appears to have a constituency and advocates in the Advent Archives Committee. In addition, the church has very wisely established funding to assist in the maintenance of the cemetery – something which we sadly see very infrequently.

As a result, the long-term prognosis for the cemetery seems very good. We believe the prognosis can be made even better by examining the issues found in this assessment and taking actions where needed.

Recommended Priorities

Our assessment questionnaire asked what the Archives Committee thought were the three most significant preservation concerns. They responded, the grand oak and its care, uneven pedestrian pathways, and the erosion of stones in the cemetery. These are rather specific concerns and we hope that this assessment focuses attention on broader issues.

The grand oak does, in fact require pruning and inspection by an ISA Certified Arborist. But all of the trees in the cemetery evidence a variety of problems and concerns. Similarly, there are uneven pathways and they do need to be taken up and relaid on a firm, level base.

These two concerns, however, represent small portions of a larger issue involving the relatively inadequate maintenance program at the cemetery. Clearly the church is aware of this since there is interest in finding a new contractor. We hope this assessment will focus in on issues that the church ensures will be in the new agreement. Most importantly, we hope that the church is beginning to realize that they must be proactive in inspections and communicate to the contractor precisely what is unsatisfactory.

The third issue – that of the stones – is more difficult to address. All stones wear and erode. There is little that can be done about this natural tendency. What can be done is to ensure that only safe and appropriate cleaning is conducted; that all repairs are appropriate and conducted by a trained individual; and that efforts are taken to ensure that other aspects of care do not contribute to the deterioration of the stones.

During conversations, the Archives Committee raised an interest in creating a scattering garden. We acknowledged that we are not experts in cremation. As we examined the memory garden and saw its lackluster maintenance, we became concerned that the church – at this point in time – may not be able to implement and maintain a scattering area at the level the public generally expects. Consequently, our view is that it would be best to postpone such interests until such time as the cemetery landscape is stabilized and the church has demonstrated its ability – and commitment – to ensure the grounds are properly cared for.

We recognize that it can be difficult to maintain focus and with this in mind, Table 8 lists the recommendations offered throughout this assessment, classifying them as *a first priority, a*

second priority, or a third priority.

First priorities are those we recommend undertaking during the coming fiscal or calendar year (2017). Some of these are organizational or administrative rules, policies, or procedures that can be quickly resolved and will help ensure future actions are guided by sound considerations. Many of these require little or no funding, but do demand a philosophical change in how the cemetery is operated. They must be enacted as a foundation upon which other changes are constructed. We strongly believe that most cemetery projects fail through inadequate or inappropriate planning – thus, we recommend in the strongest possible terms that the church (by which we mean the Archives Committee, the Vestry, and others responsible) engage in the necessary planning to help ensure success.

Second priorities are those that should be budgeted for over the next 2 to 3 years (2018-2019). They represent urgent issues that, if ignored, will result in both significant and noticeable deterioration of the cemetery as a component of the National Register property.

Third priorities are those that may be postponed for several additional years (2019-2020), or alternatively, may require 3 to 5 years to see fruition. Some actions are also less significant undertakings that require other stages to be in place in order to make them feasible or likely to be successful. Although they are given this lower priority they should not be dismissed as trivial or unimportant.

Within these three categories, the individual items are not ranked, as all are essentially equal in importance.

It is likely that some of these recommendations will not be achievable in the five years allotted for this plan. That does not mean that the issues will no longer be of consequence or will not still be critical for the survival of the cemetery. What it does mean is that after 5 years we recommend sitting down and re-evaluating what has been achieved, what still needs to be done, and determine how to move forward.

Table 8.
Prioritization of Recommendations

Priority	Action
1st Priority	1.1 Caregivers should carefully review the Secretary of Interior Standards, focusing on a fuller understanding of how daily operations may affect the long-term preservation of the cemeteries. Based on this review adjustment should be made to current policies and procedures. 1.2 The laid pavers on the east side of the church and cemetery have not been maintained and require resetting to eliminate the trip hazard. 1.3 Improved maintenance would help deter future vandalism in the cemetery and should ensure that shrubbery is pruned to allow sight lines. 1.4 The single plot gate should have stainless steel cabling used to attach the gate to the hinge post to reduce the potential for theft. 1.5 The church should periodically evaluate the need for policies dealing with homelessness in the cemetery. 1.6 The church should not allow the introduction of additional benches, urns, or vases in the cemetery. 1.7 The church should also be careful to prevent other introductions that are out of character with the historic cemetery such as grave decorations. 1.8 The introduction of new memorials must be very carefully monitored and limited. New monuments should be allowed only when the historic monument is no longer legible. In such cases, the original monument must remain and a new flush marker with the precise language of the original marker erected as a flush-to-ground lawn marker. 1.9 New monuments marking new burials (if any are eventually allowed) should match existing markers in size, material, and design. If this is not possible, then new markers should be limited to gray granite. Preferably any new marker should be erected as a lawn marker flush to the ground. 1.10 The church should require a monthly report from the landscape contractor. We have provided a simple report format that may assist. 1.11 We recommend that the landscape firm have employees and managers that are certified by some organization, such as the National Association of Landscape Professionals. 1.12 If uniforms are not provided by the contractor, the church must establish a stringent dress code to ensure the dignity of the cemetery setting. Recommendations include long pants, t-shirts with no writing or pictures, in order to maintain a professional appearance. 1.13 The church should expect the contractor to have an employee code of conduct that focuses on absolute decorum, courtesy, and respect to all individuals in the cemetery at all times. 1.14 Mowing must be conducted with sufficient frequency to maintain turf at a height of 1½-inches. This typically requires mowing at two-week intervals during the growing season. 1.15 The line weight used on trimmers should not exceed 0.065-inch.

Table 8.
Prioritization of Recommendations, continued

Priority	Action
1st Priority, continued	1.16 Grass clippings must be blown off all monuments after every mowing or trimming.
	1.17 The church should prohibit the creation of concrete or graveled plots.
	1.18 All weedy plants and vines must be removed from cemetery shrubs and planting beds. These shrubs and planting areas must be inspected on at least a six-month basis to ensure they remain clear of intrusive vegetation.
	1.19 All shrubs must be pruned by hand. Shearing must not be allowed.
	1.20 All landscape technicians must be trained on appropriate pruning techniques for the common shrubs in the cemetery.
	1.21 Minimally, the grand oak in the cemetery should have turf removed from under its drip lines and 3-inches of mulch installed. Reduction in soil compaction is also appropriate.
	1.22 There are several trees in the cemetery that require pruning for either thinning or cleaning. Pruning should preserve the natural character of the tree. All pruning must meet the ANSI A300(Part 1) – 2001 standards.
	1.23 All pruning within the cemetery grounds should be performed by an ISA Certified Arborist. We have provided a list of ISA Certified Arborists for the church to use.
	1.24 All trees must be inspected by an ISA Certified Arborist on a yearly basis and after any significant wind storm.
	1.25 All cemetery trees must be pruned to remove dead wood at no greater than five year intervals.
	1.26 Plantings, whether voluntary or intentional, that interfere with stones or fences must be evaluated on a case-by-case basis to determine appropriate remedies.
	1.27 A sign theme should be developed for the Cemetery using consistent colors and type faces.
	1.28 Regulatory signage is critical and should be erected at the two main entrances. Suggestions for the minimal regulations have been provided.
	1.29 The church should establish a policy that all flowers or arrangements will be removed by staff 10 days after holidays or when the arrangements become unsightly.
	1.30 The church should establish a policy that allows staff to remove all “temporary objects” on graves or in plots when they become withered, unsightly, or an obstruction to maintenance.
	1.31 The landscape contractor must be responsible for collecting and disposing of trash and debris prior to mowing.
	1.32 The church should help preserve the historic context of the Cemetery by ensuring stones are repaired rather than being replaced. Where a new stone is desired to improve legibility, it is good practice to maintain the historic stone and inscribe an exact transcription on a granite stone to be laid flat in front of the old stone.

Table 8.
Prioritization of Recommendations, continued

Priority	Action
1st Priority, continued	1.33 The church must carefully evaluate all of the issues involved in opening and closing graves in the cemetery. This includes how deeds will be verified, how grave availability will be verified, who will assume liability in the case human remains are identified, how the grave will be dug and backfilled, and whether a vault will be required. Alternatives may include offering a niche in trade for the plot or offering in-ground burial of cremains. 1.34 The church has no specifications for setting of monuments. We have proposed specifications that will ensure monuments are correctly set and the cemetery will not be burdened with future sinking and tilting problems. 1.35 The memory garden on the west side of the church is being poorly maintained and requires immediate, extensive care, renovation, and improvement. 1.36 The church should evaluate very carefully the long-term maintenance associated with a scattering garden. We do not recommend opening such an area until other maintenance issues are satisfactorily resolved. 1.37 The church must require that all work performed in the cemetery on monuments, fences, or walls be conducted or overseen by a trained conservator who subscribes to the Guidelines for Practice and Code of Ethics of the American Institute for Conservation of Historic and Artistic Works (AIC).
2nd Priority	2.1 Weeds are growing in several cracks in the concrete sidewalks. These weeds should be chemically treated and after being killed should be physically removed. 2.2 The laid pavers are not having weeds and grass maintained around them and this is causing a neglected appearance. Regular trimming must be part of the maintenance program. 2.3 All future modifications at the cemetery should be evaluated for their impact on universal access. Universal access should be a goal whenever possible. 2.4 All vines growing on the wall should be cut at ground level and their stems painted with an herbicide and future maintenance activities should ensure that vines are not allowed to grow on the wall. 2.5 Volunteers should periodically inspect the cemetery for vandalism or other problems. 2.6 A thorough stone-by-stone inventory with photographs would help document the current conditions at the cemetery. This would also provide an opportunity to make corrections to the Todd map. 2.7 Soil tests reveal that many plant nutrients are being affected by the low soil pH and we recommend that the cemetery grounds be limed with dolomitic lime, broadcast prior to a rainfall. Recommendations have also been made regarding appropriate fertilization. 2.8 While use of large deck mowers is impossible in the cemetery, consideration should be given to the use of 21-inch walk behind mowers where there is sufficient room to maneuver. 2.9 No mowers are to be pushed over stones, especially ledgers, coping, or walls.

Table 8.
Prioritization of Recommendations, continued

Priority	Action
2nd Priority, continued	2.10 Any mowers used must have closed cell foam bumpers installed. These must be replaced as needed. The church should expect operators with excessive wear on the bumpers should be given remedial training and instruction. 2.11 The centipede turf exhibits extensive weed invasion. The cemetery should institute a weed control program, using pre- and post-emergent herbicides. 2.12 Lawn renovation should be undertaken in areas of bare soil, moss, and compacted soil. 2.13 Core aeration should be conducted in selected areas of the cemetery, focusing on compacted areas, bare soil areas, and moss covered areas. 2.14 The church should further explore leaf management in the cemetery. 2.15 When shrubs require replacement, they should be replaced in kind. All plantings should meet the minimum requirements of the American Nursery and Landscape Association's American Standard for Nursery Stock (ANSI Z60.1-2004). All nursery stock should be carefully inspected prior to acceptance and planting. 2.16 Trees to be planted on cemetery grounds must be carefully identified to be historically appropriate and to avoid significant issues such as surface roots, excessive litter, or weak structure. A list of potential plantings is provided. 2.17 Every tree removed should be replaced by a new tree. It is also appropriate to plant replacement trees in anticipation of their need. 2.18 All replacement trees or new plantings should be at least 1-inch caliper and meet the minimum requirements of the American Nursery and Landscape Association's American Standard for Nursery Stock (ANSI Z60.1-2004). All nursery stock should be carefully inspected prior to acceptance and planting. 2.19 All new plantings should have water bags and rigid tree guards installed. 2.20 Drainage sumps or collection basins should be cleaned of trash, leaves, and silt yearly. 2.21 Below grade drains may never have been cleaned and should be carefully inspected. They may require cleaning using a snake or a high pressure water jetting device. During this operation the drain line locations should be documented using a metal detector so the lines can be added to a cemetery map. 2.22 While a stone-by-stone assessment might further refine stone treatment priorities, this assessment found relatively few stones with significant problems. The most troubling are those with iron jacking since, left untreated, these stones will rapidly join the ranks of those that are broken. 2.23 The iron plot fence should be scheduled for maintenance, including sealing joints and painting.

Table 8.
Prioritization of Recommendations, continued

Priority	Action
3rd Priority	3.1 Historic research is not a critical component of preservation efforts, especially since the cemetery is already listed along with the structure. However, there are a variety of unaddressed issues which could be addressed by volunteer research. Some of the issues, involving deeds, plans, and other details, have been raised in these discussions. 3.2 If the concrete pathways require replacement in the future, other materials should be evaluated to provide a more inviting physical appearance. 3.3 An effort should be made to establish ramp access to the cemetery grounds at the front of the church. 3.4 Any future repair efforts of the wall should use high lime mortars. An architectural conservator should be consulted to ensure correct materials and techniques are used. 3.5 The church should begin using a cemetery-specific form to identify and record evidence of vandalism. 3.6 Identification signage can be developed in the future and erected at the entrance of the cemetery to the right of the church. 3.7 The church may, in the future, benefit from a vandal resistant trash receptacle close to its entrance. 3.8 "Orphan" stones should be documented and collected for short-term safe keeping until their appropriate location is identified through research. In so far as possible, stones should not be allowed to become disassociated with their graves as this effectively loses the grave location. 3.9 The cleaning of the worst soiled stones in the cemetery using D/2 Biological Solution could be undertaken by volunteers. This will dramatically improve overall appearance and provide a very visible improvement to the cemetery landscape.

Sources Cited

Atwood, Rosanne, Jeffrey Kelly, and Ellen Lipsey
1989 *The Boston Experience: A Manual for Historic Burying Grounds Preservation*. Second Edition. City of Boston, Boston Parks & Recreation Department, Boston.

Bainbridge, Judith T.
2001 *"Building the Walls of Jerusalem": John DeWitt McCollough and his Churches*. Reprint Company, Spartanburg, South Carolina.

Edmunds, John B.
1998 *The Episcopal Church of the Advent: History and Records, 1848-1998*. Reprint Company, Spartanburg, South Carolina.

E.G.A. Certified Memorials Program
n.d. *Techniques for Erecting Granite Monuments*. Elberton Granite Association, Elberton, Georgia.

Klupar, G.J.
1962 *Modern Cemetery Management.* Catholic Cemeteries of the Archdiocese of Chicago, Chicago.

Küchler, A.W.
1964 *Potential Natural Vegetation of the Conterminous United States.* Special Publication No. 36. American Geographical Society, New York.

Lilly, Sharon J.
2001 *Arborists' Certification Study Guide*. International Society of Arboriculture, Champaign, Illinois.

Llewellyn, John F.
1998 *A Cemetery Should Be Forever: The Challenge to Managers and Directors*. Tropico Press, Glendale, California.

Sloane, David C.
1991 *The Last Great Necessity: Cemeteries in American History.* John Hopkins University Press, Baltimore.

West, Myron H.
1917 Establishing a Successful Cemetery Business. In *The Cemetery Hand Book: A Manual of Useful Information on Cemetery Development and Management*, Second Edition, pp. 21-26. Park and Cemetery Publishing Co., Madison, Wisconsin.

Cemetery Preservation Plans

Historical Research

Identification of Grave Locations and Mapping

Condition Assessments

Treatment of Stone and Ironwork

Chicora Foundation, Inc.
PO Box 8664 ▪ 861 Arbutus Drive
Columbia, SC 29202-8664
Tel: 803-787-6910
www.chicora.org