

**SAINT MICHAEL'S EPISCOPAL CHURCH  
GUIDE TO CAPITAL FACILITIES IMPROVEMENTS**



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## ST. MICHAEL' S CHURCH GUIDE TO CAPITAL FACILITIES IMPROVEMENTS

### ***What is the Guide?***

The Guide to Capital Facilities Improvements identifies the major maintenance and capital improvements projects necessary to prevent deterioration of the building over a 20 year period. It also addresses the financial requirements to meet these needs.

### ***Why do we need one?***

The Guide will allow the church to identify, plan for, and finance major improvements without having to respond on a "crisis" basis.

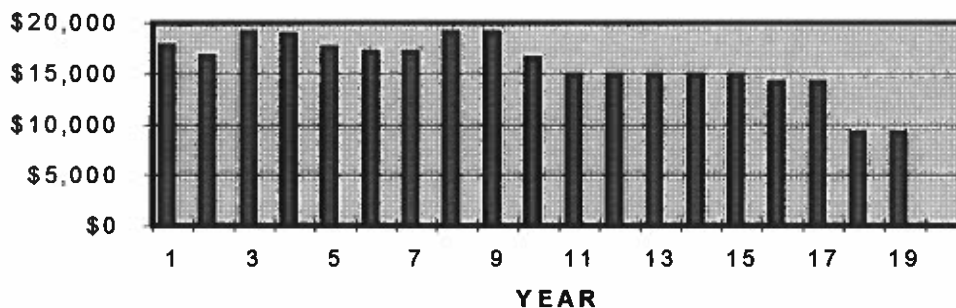
### ***Why is the time frame so long?***

Maintenance should be viewed as cyclical and long term in nature. Some systems, such as the furnaces and some kitchen equipment, have long, but predictable, life expectancies. It is prudent management to plan for replacement of systems at the end of their useful life. The larger projects require many years of savings to allow the most cost effective use of funds.

### ***How much will it cost?***

The annual contribution needed to keep to the suggested schedule is \$18,000. However, the Guide can be used as a priority list rather than a strict schedule, depending on availability of funds. Costs during the first ten years will be higher as we "catch up" with deferred maintenance items. During the planning period as items are completed, new items will be identified and some items will need redoing. The following chart, ***Annual Contributions***, and the table on the next page, ***Annual Contributions Profile***, show the amounts actually necessary to implement the Guide:

### **ANNUAL CONTRIBUTIONS**



## ANNUAL CONTRIBUTIONS PROFILE

PLAN YEAR	CONTRIBUTION
1	\$ 17,740
2	\$ 16,609
3	\$ 18,975
4	\$ 18,797
5	\$ 17,511
6	\$ 17,046
7	\$ 17,046
8	\$ 19,001
9	\$ 19,001
10	\$ 16,401
11	\$ 14,749
12	\$ 14,749
13	\$ 14,749
14	\$ 14,749
15	\$ 14,749
16	\$ 14,093
17	\$ 14,093
18	\$ 9,099
19	\$ 9,099

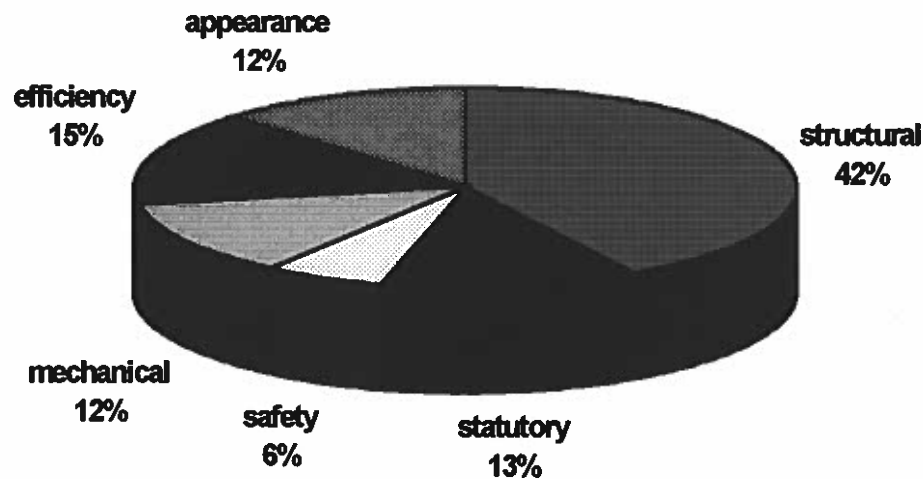
### ***How will it be financed?***

The annual contribution plus the interest on the accumulated annual contributions will finance the improvements.

### ***What types of projects are included in the Guide?***

The chart at the beginning of the next page, ***Projects by Type***, breaks down the types of projects included in the Guide: Almost half are needed to maintain the basic structure of the Church and to make repairs which come with the aging of the building. These are included as ***Structural Projects***. The other categories include ***Efficiency, Appearance, Mechanical*** (mainly heating and air conditioning), ***Safety***, and ***Statutory*** (this category includes items required by local building, safety, or health codes). Long term projects include some which would increase the energy efficiency of the building, such as replacement of the Education Wing windows. Major projects which affect the appearance of the building, such as painting the stucco and replacement of carpeting, are also a part of the Guide.

## **PROJECTS BY TYPE**



### ***What individual projects are included and what are their costs?***

The individual projects by priority are provided in the ***Project Listing and Cost Estimate*** table. Descriptions of the projects are found in the following section, ***Project Descriptions by Priority Group***. Segreti and Tepper Architects, Brandes and Cassagnol Structural Engineers, and J.B. Wyble & Associates Electrical and Mechanical Engineers, provided us with a needs assessment. Most of the estimates were provided by the Hitt Contracting Company supplemented in some cases by outside contractors (for example, the cost of repairing the stained glass, window replacement, painting and lightning protection).

### ***How can we implement the Guide? How is it updated?***

The Vestry needs to make an annual review of the ***Guide*** as part of the annual budget process to:

1) **decide** whether new items should be added, including new building needs identified as a result of new programs, and to eliminate items which have been completed. ***Individual projects can be undertaken only with Vestry approval.*** The form ***Guidance for Implementation*** has been included to help the Vestry in evaluating the need for major cyclical improvements. It shows industry standards for estimating the useful life of various systems and provides room to note when major cyclical improvements are completed. As individual items are implemented, they can be eliminated, while newly identified items can be added. The Buildings and Grounds Committee will be happy to help in this review.

(2) ***make needed corrections*** to the financial projections. The first appendix to the plan, the ***Schedule of Annual Contributions***, shows the calculations on which the schedule and the funding projections are based. The Guide assumes a 3% annual inflation rate and an annual return of 8% on the Church's investments. This document can be loaded onto the church's computer and used to make changes in financial projections due to changes in needs, inflation rate projections, or rate of return.

(3) ***evaluate maintenance contracts yearly*** to determine whether they are fulfilling the needs of the church. These contracts form the backbone of adequate routine maintenance.

***Does the Guide address all items needed to keep the building in sound and presentable condition?***

No. The second appendix, the ***1996 Routine Maintenance Budget and Schedule***, provides a tool to make sure all basic maintenance areas are addressed each year. It should be reviewed by the Vestry together with the Guide each year. Some costs which were addressed as deferred maintenance initially should be included in the routine maintenance budget thereafter. One example is exterior painting. The key to controlling maintenance costs is faithful attention to maintenance in all important areas. The budget should decrease somewhat as electrical improvements and other deferred maintenance items are completed.

## PROJECT LISTING AND COST ESTIMATE

PROJECT	PRESENT COST
<b>YEARS 1-3</b>	
Jefferson Street stairs	\$12,890
Replace drains	\$5,400
Office windows	\$3,000
New Shed	\$1,500
Initial Stained Glass repairs	\$2,500
Guild Hall areawell	\$12,000
Repair Stucco	\$5,000
Exterior painting, etc.	\$4,000
<b>YEARS 4-6</b>	
Reface chimney	\$900
Resurface West Wall	\$1,000
Playground Stoop	\$2,800
Office Air Conditioner	\$5,000
Loft Air Handler	\$8,000
Water Fountains	\$2,400
<b>YEARS 7-10</b>	
Repoint Stone	\$2,600
Janitor's Sink	\$4,500
Jefferson Street retaining wall	\$5,000
Remaining Stained Glass repairs	\$3,800
Upper Flat Roof	\$15,000
Office Roof Deck	\$9,800
Handicapped Lift	\$25,000
Sunday School Carpet	\$7,000
<b>YEARS 11-20</b>	
Paint Stucco	\$5,000
Lightning Protection	\$2,000
North Side Drain	\$3,000
Education Wing Windows	\$42,500
Canopies	\$9,000
Slate Roof	\$55,000
Coat Areawells	\$3,000
Terracing Front	\$10,000
Furnaces	\$20,000
Kitchen cabinet doors	\$8,500
Dishwasher	\$1,000
<b>TOTAL</b>	<b><u>\$298,090</u></b>

## PROJECT DESCRIPTION BY PRIORITY GROUP

### ***GROUP I (YEARS 1-3)***

1. **REPLACEMENT OF JEFFERSON STREET STAIRS:** These stairs are steep and dangerous and do not meet Arlington County Building Code requirements. They have been replaced in 1995.
2. **REPLACEMENT OF DRAINS:** The Church has an underground rainwater collection system designed to carry water from the roof gutters and downspouts of the Church to the street. Several of these were collapsed, allowing water to accumulate around the foundation and to drain water onto a neighboring property. This major project has been completed in 1995.
3. **REPLACEMENT OF RECTOR'S OFFICE WINDOWS:** The new heating and cooling units cannot work efficiently to maintain a pleasant working environment until these highly inefficient windows are replaced.
4. **NEW SHED:** This project was anticipated by the Growing in the Spirit campaign. The church is very short of storage space and the shed is much needed. A new shed should be built on the site of the old one.
5. **STAINED GLASS WINDOW REPAIRS:** The plans and designs for the windows in the sanctuary were started in 1975 and the last window installed in 1977. Even though the windows have been in place a relatively short time (for stained glass windows), those on the South side (11th Road) of the sanctuary are experiencing significant bulging. This is due primarily to lack of proper reinforcement intensified by exposure to afternoon sun on the South side. There are also panes which are starting to bulge on the North side. The architectural report recommended that the windows be repaired as a first priority. Mr. Dieter Goldkuhle, who maintains the stained glass at the National Cathedral, surveyed our windows and recommended that custom reinforcing bars be made to correct the problem and to prevent it from recurring. He believes that the worst cases will start to lose pieces of glass within four years. Replacement of these windows is not covered by the church's insurance.
6. **REBUILDING OF THE GUILD HALL AREAWELL:** This unreinforced masonry wall has been damaged by high hydrostatic pressure caused by poor drainage of the ground in the vicinity of the wall. It has been recommended by both Segreti and Tepper, Architects, and Arlington County that the wall be rebuilt for safety reasons as soon as possible. The scope of work should include: removal of the damaged wall, replacement with a reinforced filled concrete wall with weepholes, removal of two trees at the top of the hill, and creation of a swale along the new wall to improve drainage and reduce erosion.



7. **REPAIR EDUCATION BUILDING STUCCO:** There are numerous cracks in the stucco of the education building, especially around doors and windows and around and above the parapet near the Rector's office. These need to be repaired to prevent the entry of water into the building, which could cause much more extensive damage if not corrected.

8. **EXTERIOR PAINTING OF TRIM AND METAL, GLAZING AND CAULKING:** These are actually routine maintenance items which have been deferred over the years, and which should be brought up to standard and addressed on a cyclical basis thereafter. If deferred, they lead to expensive carpentry work and can permit leaks to develop.

### ***GROUP II (YEARS 4-6)***

9. **REFACE CHIMNEY:** The upper portion of the chimney is in poor condition due to water penetration. The bricks should be refaced and remortared in order to prevent future water damage.

10. **RESURFACE WEST WALL:** The finish of the west wall of the sanctuary, i.e. the outside of the front wall of the chancel of the church, is badly weathered and needs painting in order to avoid leaks into the sanctuary.

11. **REPLACE PLAYGROUND STOOP:** The <sup>stair</sup>stoop outside the playground door has settled over the years. It should be redesigned and replaced with a stoop bracketed to the building. A handrail will be added.

12. **OFFICE AIR CONDITIONER:** The office air conditioner will have reached the end of its useful life in 2000 and should be replaced.

13. **LOFT AIR HANDLER.** The loft air handler will have reached the end of its useful life in 2001 and should be replaced.

14. **WATER FOUNTAINS:** The fountains are old and the one on the first floor experienced an electrical fire last year. They are scheduled for replacement in 2001 but should be replaced before then if the funds are available.

### ***GROUP III (YEARS 7-10)***

15. **REPOINT STONE:** This is a cyclical maintenance function for stone buildings which prevents costly repairs later. Although the stone is in good condition, there is missing mortar around the limestone watertable (band) on the North side of the church and in the stone joints on that side and elsewhere on the building.

16. **ADD JANITOR'S SINK:** There is no appropriate means to dispose of waste water from cleaning the lower level of the church as required by the Arlington County Building Code. The Guild Hall powder room should be divided to include an enclosure for a janitor's sink.

17. **JEFFERSON STREET RETAINING WALL:** The retaining wall on Jefferson Street should be redesigned and extended to the Jefferson Street Stairs, both for appearance and to increase protection against the erosion which has plagued that area. Tree cover should be reduced to permit growth of ground cover.

18. **REMAINING STAINED GLASS REPAIRS**(See Stained Glass, above).

19. **UPPER FLAT ROOF:** The upper flat roof (roof of the Education Building) will need replacement in 2005.

20. **OFFICE ROOF DECK:** The skylights in the office roof add to the already difficult problem of maintaining the flat roof over the office, which has leaked almost continuously over the years. The skylights should be removed and replaced with a solid roof.

21.. **HANDICAPPED LIFT:** In order to make the Lower Level of the Church accessible to the handicapped as required by Arlington County as a result of the kitchen renovation, the Church plans to add a lift from the foyer to the Guild Hall.

22. **SUNDAY SCHOOL CARPETING:** The carpeting is in need of replacement.

#### ***GROUP IV (YEARS II-20)***

23. **PAINT STUCCO:** The stucco, even when the cracks are repaired, is unsightly. Painting would also help to seal the structure and prevent cracks from developing. It should be done every 20 years.

24. **LIGHTNING PROTECTION:** Because the church is located in a hilly area and is surrounded by tall trees, it is advisable to add lightning protection. Rods should be placed on three trees in key locations near the church to provide protection.

25. **NORTH SIDE DRAIN:** There is one additional drain which will have reached the end of its useful life expectancy by 2011 and should be replaced.

26. **EDUCATION BUILDING WINDOWS:** In anticipation that the education building will be used frequently in the future, it is recommended that the

windows be replaced with new ones which would be energy efficient and would not require painting, caulking or glazing. These are significant expenditures because there are 35 window openings in the education building.

**27. CONSTRUCT CANOPIES OVER TWO FIRE EXITS:** The current Building Code requires that all exterior fire exits be protected from accumulations of ice and snow. Although the Church is not subject to this requirement, we recommend that canopies be constructed at some time to protect the playground stoop exit and the metal fire exit.

**28. REPLACE SLATE ROOF:** The slate roof of the South Porch is in much better condition than that of the main building. Many of the shingles on the South side of the main church building have cracked and been repaired and are oxidizing (identified by a reddish color) at a faster rate than the shingles on the North side.

One roofer thought the slates were Buckingham-Virginia, which can last 100 years. However, the architect has indicated that the presence of oxidization shows that they are Vermont variegated slate, which has a shorter life. He has recommended replacement of the roof within 5 years. The Buildings and Grounds Committee recommends that because of the extensive nature of the project, funds be allocated to further study our options while recognizing that the roof will need replacement within the next 20 years. This delay can be made because since the ceiling is directly below the slate roof, we can see leaks before they become severe. However, it would be imprudent to ignore the condition of the roof as it now appears.

**29. COAT AND PARGE WINDOW WELLS:** The window wells in the education building were never filled or coated. They should be properly treated to prevent deterioration from exposure to the elements.

**30. TERRACE FRONT OF PROPERTY:** The front of the property is too steep to maintain grass adequately. It would help control runoff and be more attractive if landscaped with appropriate plants and timbers or stone. Additional drains may also be needed to slow runoff.

**31. FURNACE REPLACEMENT:** The useful life of the new furnaces is 20 years. Therefore, they will need replacement at the end of the 20 year planning period.

**32. KITCHEN CABINET DOORS:** The cabinet doors will need replacement in 20 years.

**33. DISHWASHER:** The dishwasher will need replacement in 20 years.

**GUIDANCE FOR IMPLEMENTATION**

<b>SYSTEM</b>	<b>SUBSYSTEM</b>	<b>LIFE EXPECTANCY</b>	<b>COMPLETION DATE</b>	<b>Cycle I COMPLETED</b>	<b>Cycle II COMPLETED</b>
<b>CAULKING, GLAZING</b>	exterior	5			
<b>DRAINAGE SYSTEM</b>	gutters and downspouts	25			
	underground drains (PVC)	40			
<b>HEATING/AIR CONDITIONING</b>	furnaces	20			
	air conditioners	20			
	condensing units	20			
<b>PAINTING</b>	interior	10			
	exterior trim	5			
	stucco	20			
<b>ROOFS</b>	built up	15			
<b>STONE REPOINTING</b>	limestone and rubble stone	25			
<b>STUCCO REPAIR</b>	exterior stucco	20			

**NOTE: The chart above is based on accepted industry standards for the life expectancy of various items.**

**1996 ROUTINE MAINTENANCE BUDGET AND SCHEDULE**

<b>BUDGET ITEM</b>	<b>DESCRIPTION</b>	<b>YEARLY COST</b>	<b>REVIEW REQUIRED</b>
<b>MAJOR CONTRACTS</b>			
<i>Bunwell Cleaning Company</i>	covers basic cleaning, trash removal, replacement of light bulbs, and set up for scheduled church functions (Detail in contract attachment which follows).	\$7,900	Yearly by Vestry
	Cost per set up for non-routine church functions. \$20/each.	\$200	Yearly by Vestry
<i>Arlington Landscaping Services</i>	covers basic exterior maintenance including clearing roofs, grounds, gutters, downspouts, and underground drains of leaves, hauling leaves in fall, basic lawn care, lawn mowing, and snow removal (Detail in contract attachment which follows).	\$11,800	Yearly by Vestry
<i>Arlington Heating and Air Conditioning</i>	Maintenance contract for all heating and air conditioning units; twice yearly maintenance	\$800	Yearly by Vestry
	Repairs to the units not included in maintenance contract, replacement of thermostats	\$800	
<b>SUPPLIES</b>	Light bulbs, Clean Up Day supplies, miscellaneous building supplies	\$700	
<b>ELECTRICAL</b>	Replace dimmers in sanctuary, all bathroom fans, add fluorescent lights in lower Sunday School rooms	\$2,000	
<b>PLUMBING</b>	Miscellaneous repairs	\$300	
<b>PAINTING, CAULKING, GLAZING</b>	Repair and paint sanctuary wall	\$300	
<b>CARPENTRY/LOCKSMITH</b>	Replace lock on main door, miscellaneous	\$200	
<b>EXTERMINATOR</b>	Yearly treatment	\$100	
<b>OTHER CONTRACTED SERVICES</b>	Yearly building inspection by construction contractor	\$100	
	Tree maintenance	\$400	
	Lawn watering (should be included in grounds contract next year)	\$200	
<b>REPLACEMENT PLANTS</b>	Plants as needed; completion of Jefferson Street stairs landscaping	\$500	
<b>RECTORY REPAIRS AND IMPROVEMENTS</b>	Heating and air conditioning servicing	\$400	
	Leaf removal from gutters	\$100	
	Appliance repair/replacement	\$300	
	Miscellaneous repairs	\$200	
	<b>TOTAL</b>	<b>\$27,290</b>	

## **ACKNOWLEDGMENTS**

### **Buildings and Grounds Committee:**

Caroline Planting, Chairman  
William Baxter, Junior Warden  
Mark Bryfogle  
John Hager  
Cindy Matlack  
Peter Melin  
Mark Planting  
Margot Shay

### **Consultants:**

Segreti Tepper Architects, P.C.,  
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