

# Physical Facilities Assessment

For

St. Raphael Parish  
1215 Modaff Road  
Naperville, Illinois 60540

Healy | Bender Project No.: 8-415-81

May 4, 2016



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# Introduction

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**Main Entrance at Parish Offices**

The objective of this report is to provide a facilities overview of St. Raphael Catholic Parish located at 1215 Modaff Road, Naperville, Illinois.

The parish campus is located ½ mile north of the intersection of Modaff and 75<sup>th</sup> Street (fig. 1). The facility includes a 27,000sf multi-level church constructed in 1991, a 46,800sf multi-level K-8 school constructed in the 1960s including a 9,500sf multi-level school addition constructed in 2001, and a 21,700sf connecting parish office building constructed in 2003 all situated on approximately 9.3 acres in a quiet residential neighborhood. Total square footage of the complex is approximately 95,500sf.

This report is based on observations and evaluations made by architects and engineers for the current physical conditions and the identification of components and systems that may need to be repaired, replaced or upgraded within the next 1-10 years in order to maintain ongoing use and functionality. Other recommendations are made for consideration of this facility against similar, new Catholic Parish facilities that might be constructed today. The information herein is intended to be used as a tool for planning facility improvements, maintenance and general long term sustainability.

Each system of the building outlined in this report will be classified as either:

Recommendation – those elements or systems that should be addressed, repaired or replaced due to age or other deficiencies.

Enhancement – those elements or systems that may benefit operations or might be provided in a similar new facility if constructed today.

Each item includes an estimated cost to implement the solution. Estimated costs do not include contingencies or professional design fees. The preliminary costs are based on 2016 dollars, that is, they do not take inflation into account of implemented in the future.

# Scope of the Physical Facility Assessment

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The St. Raphael parish complex consists of three (3) interconnected buildings on approximately 9.3 acres. The buildings include a church, parish offices and meeting space, and an elementary school with gymnasium all totaling approximately 70,000 square feet (sf).

Observations were conducted on September 1-2 and 14, 2015 by Healy, Bender & Associates, Inc., the Architect and on November 3, 2015 by 20/10 Engineering Group, the Engineer.

In addition to communications with Marian Johnston, Business Manager and Matt Latawiec, Facilities Manager during the on-site visits, a facility representative meeting was held on October 21, 2015. Existing drawings for the 1991 Worship Facility and the 2001 additions were also reviewed.

1. Perform a site assessment of Parish grounds noting the general condition of parking lots, site access points, pedestrian walks and site lighting.
2. Perform observations of the facilities assessing the general condition of the building envelope including roofs, exterior wall systems, exterior doors and windows, and the condition of door hardware.
3. Walk-through all interior areas noting the condition of ceilings, walls, floors, doors and hardware, and built-in equipment and casework. Perform observations of structural components, where exposed, including but not limited to foundations, load bearing walls, columns, lintels, roof and floor structures.
4. Provide an overview of existing mechanical, plumbing, and electrical systems. The overview identifies the approximate life expectancy of existing equipment and estimated replacement costs.
5. Meeting(s) with facility representatives to review and understand ongoing facility issues.
6. Prepare a written report summarizing the above information. Color photographs are included where appropriate to document and describe the findings. The report identifies and prioritizes general deficiencies including estimated costs for repair/replacement utilizing a 1, 5 and 10 year repair priority schedule.
7. Where appropriate, the report provides facility betterment recommendations, which may be above and beyond necessary repair work.





Worship Facility  
27,000sf

Parish Offices  
and Meeting  
Facilities  
21,700sf

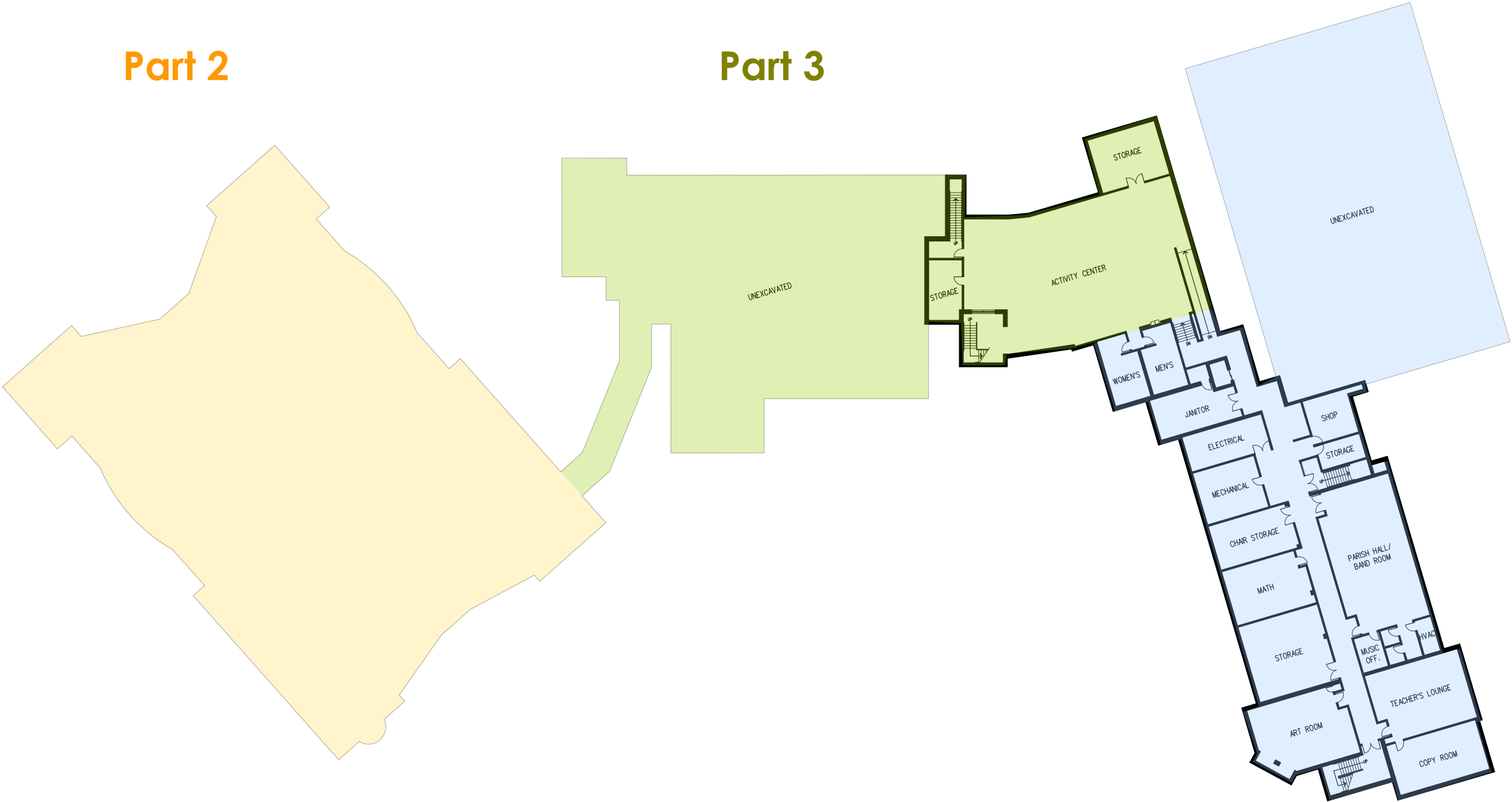
School  
46,800sf



Part 2

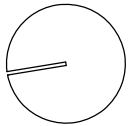
Part 3

Part 4



BASEMENT FLOOR PLAN

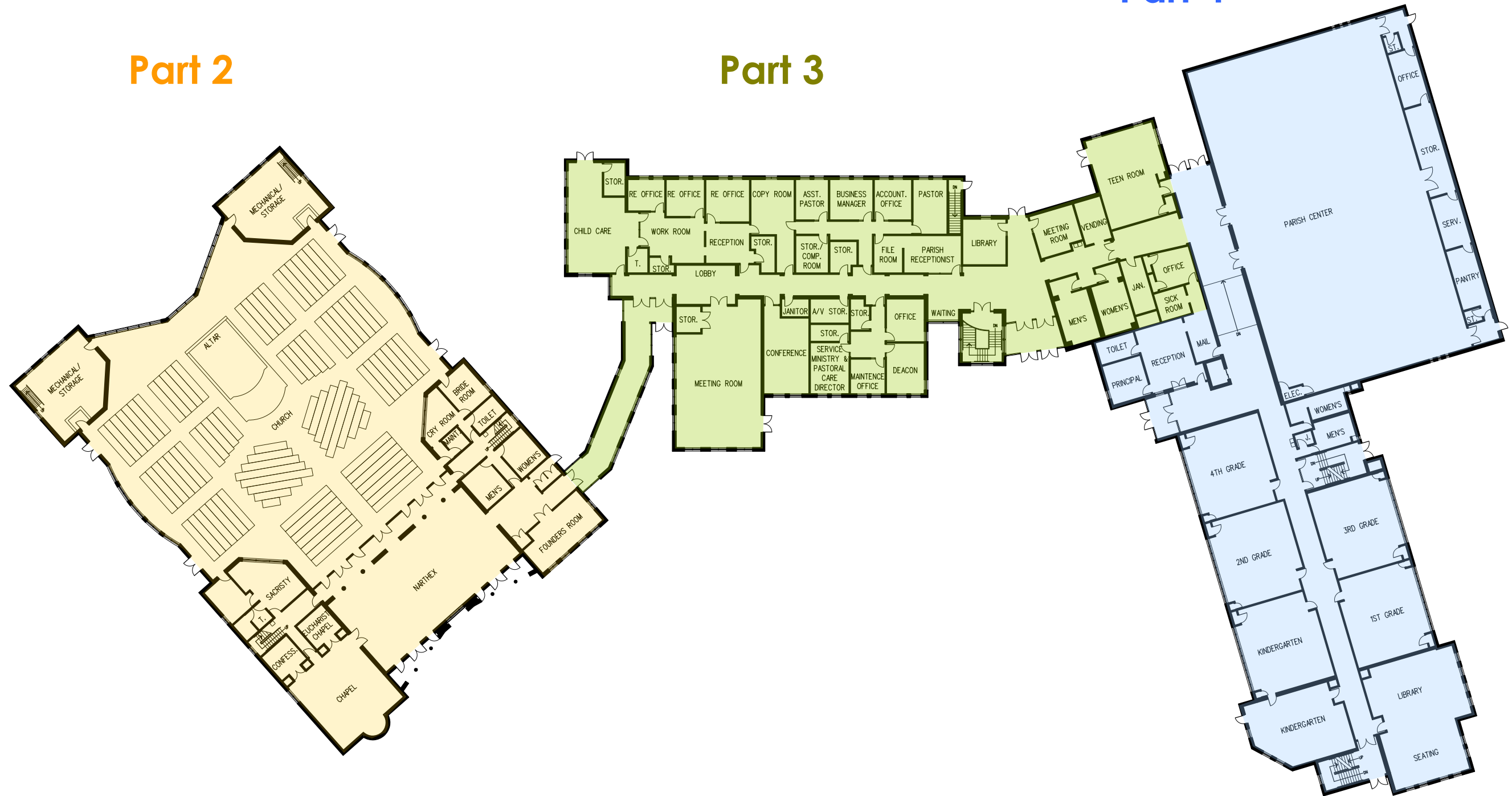
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Part 2

Part 3

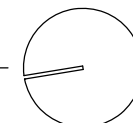
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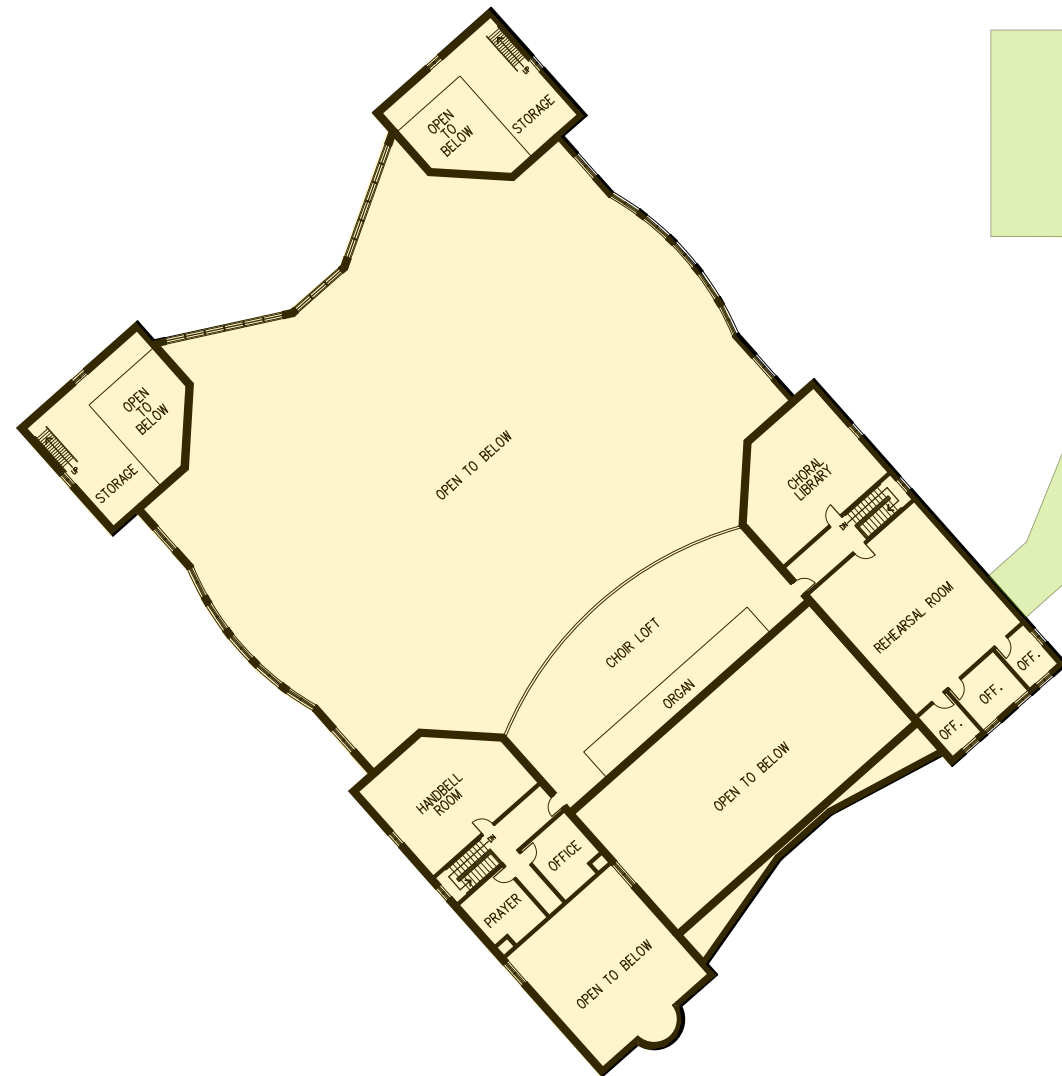
MAIN FLOOR PLAN

1" = 40'-0"

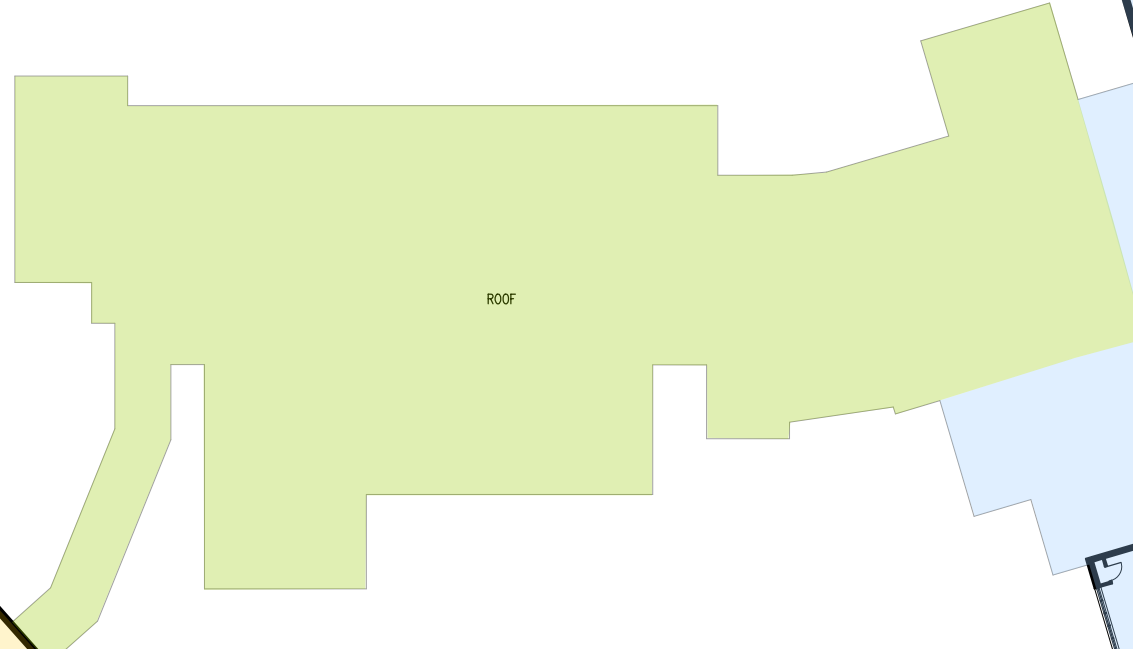
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## Part 2



## Part 3



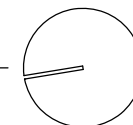
## Part 4



## UPPER FLOOR PLAN

1" = 40'-0"

0 10 20 40 80 120



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### MEP Systems Recommendations, Priorities and Total Estimated Costs



## Part 1.1 Site and Parking Facilities

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### **Site Functionality and Pedestrian Access**

Four concrete pedestrian sidewalks connect the parish facilities to the neighborhood, all of which link to Modaff and are generally in good condition. The eastern edge of the parking lot abutting the facilities provides a continuous sidewalk of at least 5' wide providing ample room to collect pedestrians from the parking lot. The concrete walks are raised several inches providing a physical separation between vehicles and pedestrians. Entry walks to the school and parish offices are concrete, easily identifiable as entry points, and adequately situated. Sidewalks on-site are generally in good condition, though limited areas particularly near the church entry should be repaired or replaced to minimize tripping hazards where the backside of curb is not level with the walk.



**Typical concrete walk with curb**

A generous brick paver entry plaza exists immediately west of the church narthex and is well suited to the large crowds that enter and exit that facility. Certain areas of brick pavers need minor leveling adjustment to eliminate tripping hazards and potential ponding after rainstorms, including areas near the narthex doors.

If opportunities arise in the future, one or two additional hard surface paths from the site to the neighborhood to the north and/or west may be desirable for pedestrian access.

Main entry walks at the church, parish offices and school lead directly to accessible building entrances. There are several doors around the perimeter of the building where thresholds exceed ½" or where the interior floor slab is greater than ½" compared to the concrete walk, stoop or landing immediately outside. Transitions greater than ½" are not considered accessible and though not every entry is required to be fully accessible, it is recommended to proceed with improvements meeting Illinois Accessibility Standards when future site work is performed in these areas.

**St. Raphael Parish**  
Physical Facility Assessment

## Part 1.1 Site and Parking Facilities



Exterior doors at Narthex



Exterior door at Church/Parish Office connection



Southwest exterior door at Gymnasium



## Part 1.1 Site and Parking Facilities

The playground perimeter curb and equipment is not compliant with accessibility standards, but the equipment appears to be less than two years old and is in 'like new' condition with no apparent maintenance concerns. The area is provided with rubber mulch.



**Playground with rubber mulch**

An open grass area with detention occurs immediately west of the paved parking areas. This area is mowed and is useable for play during dry weather conditions.

Parish grounds immediately around the buildings are well maintained and landscaped.

### **Parking Lots and Vehicular Access**

Two drives at Modaff are the only vehicular site access points and both terminate at the east end of the property. Parking and drive areas are bituminous pavement, generally in good condition with limited areas of minor or major alligating. Alligating is a condition easily recognized by a series of cracks grouped together in one area. This type of cracking is indicative of subgrade problems. The closer these cracks are together, the shallower the failure. Inversely, the further these cracks are apart, the deeper the failure. Repair should be made at these areas to maintain the pavement system. Sealcoating and striping has been maintained. Areas of alligating, deterioration and depressions should be cut back removed to sub-base, testing and any unsuitable material removed, compacted and repaved. Cracks over 1/4" should be sealed with an elastomeric sealant before the next sealcoating cycle (generally every 2-3 years depending on wear).

## Part 1.1 Site and Parking Facilities



**Parking lot pavement alligating**



**Pavement subgrade failure near catch basin**



## Part 1.1 Site and Parking Facilities



**Wood Fence at trash enclosure**



**Interior of trash enclosure**

Dumpsters are enclosed behind gates and a wood fence at the southeast corner of the property. The overall size and maneuverability within the enclosure appears to be adequate. As the bituminous pavement ages and pavement repairs are made, it is recommended that the area within the enclosure and approximately 8 to 10 feet north of the enclosure be replaced with 8" thick concrete in lieu of bituminous pavement to improve durability against heavy garbage truck wheels and depressions made over time from trash container wheels.

## Part 1.1 Site and Parking Facilities

### **Site Lighting**

The exterior lighting consists of bollards located along the pedestrian walkways leading to the church facility, along with wall packs on the exterior walls of the 2-story school building and pole mounted floodlights to provide general illumination at parking areas. There is a roof mounted floodlight on the 2-story school building aimed toward the parking lot for additional supplemental lighting. All lights appear to be in working condition. Exterior lights contain HID lamps controlled by time clocks.

The main parking area west of the building appears to be have deficient nighttime light levels, especially near the far western edge closest to the stormwater detention area. Adding additional pole mounted fixtures is recommended to improve safety and security. New light poles should be LED source for energy efficiency, reduced maintenance, and light distribution pattern. Considerations should also be made to replace existing exterior lighting with LEDs for consistency of light color, lumens and the reasons noted above.







**Typical Light Pole**



**Example: Energy-efficient LED site lighting**

**St. Raphael Parish**  
Physical Facility Assessment


## Part 1.2 – Site and Parking Facilities



<b>Site Functionality and Pedestrian Access</b>				
<b>Item</b>	<b>Evaluation Item</b>	<b>Rating</b>	<b>Priority</b>	<b>Comment</b>
1	Parish grounds are valued and reflective of neighborhood and overall community	A		
2	Use/compatibility with neighborhood	A		
3	Parish identity is made with a permanent, lighted sign visible from primary street	A		
4	The site layout and/or signage allows for identification of building entrances	A		
5	Access to portions of the site are effectively controlled during the school day when children are present	B		Use of road cones
6	Site is barrier-free [handicapped accessible]	B		Eliminate sidewalk tripping hazards
7	Site layout provides separation for simultaneous use during events, after-hours and weekend use	A		
8	Site is well landscaped	A		
9	Trash areas are enclosed for security and screened from view	B		Repair work needed at trash enclosure
10	Building minimizes "blind spots" that are difficult to monitor and secure	C		General layout of building creates complex geometry that may be difficult to monitor from street
11	Pedestrian access includes adequate sidewalks with designated crosswalks, curb cuts, and appropriate slopes.	A		
12	Sidewalks are maintained for safety	B		Eliminate sidewalk tripping hazards
13	Pedestrian and vehicular traffic are separate, except in designated crosswalks.	A		
14	Site is suitable for special instructional needs like outdoor learning	A		
15	Well-equipped playgrounds are separated from streets / parking	B		
16	Playground equipment is free from obvious hazards	A		
17	Site has stable well-drained soil free of erosion	A		
18	Stormwater detention facilities	A		
19	Flagpole	A		

<b>Parking Lots and Vehicular Access</b>				
<b>Item</b>	<b>Evaluation Item</b>	<b>Rating</b>	<b>Priority</b>	<b>Comment</b>
1	Entrances / exits are located to permit efficient traffic flow	A		
2	Car, bus, and service vehicular traffic are separate	B		

**St. Raphael Parish**  
Physical Facility Assessment

## Part 1.2 – Site and Parking Facilities

3	Sufficient on-site, solid surface parking is provided for daily use	A		
4	Sufficient on-site, solid surface parking is provided for evening/event use	A		
5	Sufficient on-site, solid surface parking is provided for Sunday mass	A		Exception is Christmas and Easter masses
6	Bituminous pavement	B		Ongoing maintenance needed
7	Pavement markings	A		

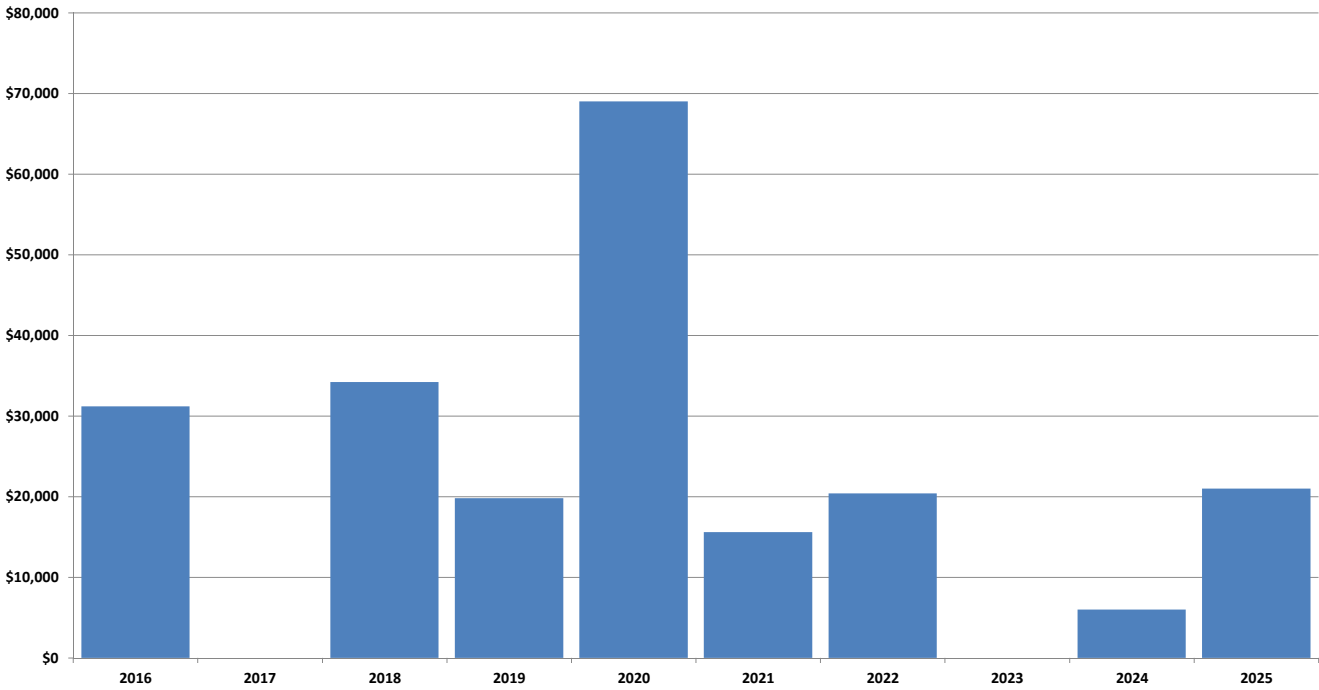
Site Lighting				
Item	Evaluation Item	Rating	Priority	Comment
1	Parking lot – general lighting	C		Consider additional poles, LED fixtures for energy efficiency
2	Building entrances – general lighting	A		
3	Building mounted lighting – general security lighting	B		Consider replacing with LED fixtures for energy efficiency
4	Flagpole lighting	A		
5	Specialty / monument lighting	A		

Capability of Site to Support Building Expansion				
Item	Evaluation Item	Rating	Priority	Comment
1	Overall acreage (approx. 9.75 ac)	B		
2	Building setbacks	B		Tight along north/east/south
3	Proximity to neighbors	C		Located in an established neighborhood
4	Ability to support building or parking lot expansion projects	B		To west, may include acquiring additional properties to south



PHYSICAL FACILITY ASSESSMENT  
RECOMMENDED ACTIONS COST SUMMARY

St. Raphael Parish											
Part 1.3 - Site and Parking Facilities	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Subtotal
Site Functionality and Pedestrian Access											
Traffic control/gates			\$5,000								\$5,000
Concrete walk repair/leveling			\$20,000								\$20,000
Paver repair/leveling			\$3,500								\$3,500
Trash enclosure/concrete apron						\$10,000					\$10,000
Parking Lots and Vehicular Access											
Patching/sealcoating (140,000sf)	\$16,000			\$16,500			\$17,000			\$17,500	\$67,000
General patching work	\$10,000					\$3,000			\$5,000		\$18,000
Site Lighting											
LED relamping					\$22,500						\$22,500
Additional fixtures/poles					\$35,000						\$35,000
Subtotal Construction Costs	\$26,000	\$0	\$28,500	\$16,500	\$57,500	\$13,000	\$17,000	\$0	\$5,000	\$17,500	\$181,000
Subtotal Soft Costs (Contingencies, Professional Fees, Staff Labor, etc.)	\$5,200	\$0	\$5,700	\$3,300	\$11,500	\$2,600	\$3,400	\$0	\$1,000	\$3,500	\$36,200
TOTAL PROJECT COSTS	\$31,200	\$0	\$34,200	\$19,800	\$69,000	\$15,600	\$20,400	\$0	\$6,000	\$21,000	\$217,200



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### MEP Systems Recommendations, Priorities and Total Estimated Costs

## Part 2.1 - Worship Facility

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### **Building Functionality**

The 27,000 SF church building was added in 1991 and is located at the northeast corner of the site. The location on the site provides a visible presence to the community. An enclosed, single story corridor connects the church to the parish offices and school.

The multi-level church is a relatively symmetrical plan with a narthex, day chapel, vesting and working sacristies, bride's room, cry room, storage and toilet facilities on the main level. Northwest and southeast portions of the upper level is connected by a choir loft. The second floor contains offices and space for music ministries along with mechanical operations. Lofts adjacent to the sanctuary at the northeast and southeast corners provide well-used art & environment storage.

With the layout of the church facility on the site, limited expansion may be possible. The parish office building to the south makes future development in that direction a bit difficult but not altogether impossible. The existing parking area to the west of the church building could be reconfigured to allow expansion of the existing chapel, narthex or meeting room space if these aspects are deemed necessary in the future.

### **Roofing Systems**

A steel roof structure supports gable roofs over the nave and sanctuary. The narthex and perimeter ancillary areas are covered by low sloped modified bitumen roof systems.

The central gable roof over the worship space and portions above the narthex are a concrete tile product original to the building. Concrete roof tiles often last 35-40 years or more. Concrete tiles are Class A fire rated and resistant to damage from hail and high winds, typically achieving a minimum of a Class 3 hail resistance rating. Some concrete tile roof systems can sustain winds in excess of 125 miles per hour which would cause damage to many other roofing materials. A yearly visual inspection of a concrete roof can help protect against accumulation of leaf debris and moss growth. Moss and algae do not harm concrete tiles, but periodic cleaning with a power washer by a professional can remove them, and the use of biocides or zinc strips may be incorporated to slow the growth of these organisms. After periods of high winds or hail, a visual inspection of the roof should be made to ensure that there are no cracked, broken, or loose tiles needing replacement. Concrete tile roofs are prone to moisture penetration from wind driven rain or snow more than any other type of roofing product. The underlayment, batten system, and flashing and quality of installation are very important and key to determining how long the roof will last. In this installation, the tile have lost some surface texture over the years, but with continued maintenance should last another 10-15 years.

## Part 2.1 - Worship Facility



**Concrete Roof Tiles at Nave**

The low sloped loped modified bitumen roof system installed over the central portion of the narthex, day chapel and perimeter ancillary support spaces is original to the building. Modified bitumen roof systems often last 20-25 years. Long term exposure of the bituminous material to ultraviolet rays eventually degrade the roofing system causing blisters, split seams, and separation from walls and flashings. Signs of deterioration are evident at flashing and boot penetrations at vents, exhaust fans and pipe supports. This roof system is at the end of its expected life and should be budgeted within the next two years for complete replacement. Regular inspection and maintenance is recommended to address areas of deterioration and ponding.

Both the pitched roof and low slope modified bitumen roof systems slope to internal roof drains connected to the storm sewer system. Roof drains should be cleaned and inspected for proper operation quarterly.



**Low Slope Modified Bitumen Roof South of Nave**



## Part 2.1 - Worship Facility

### **Exterior Walls, Foundations and Structure**

The church is steel frame with face brick veneer over light gauge metal framing. Wall construction is a cavity wall system. A continuous stainless steel drip is in place at the bottom of the wall. Weeps and rope were generally visible at the damp course flashing (bottom of the wall) and above openings, though there were several areas where none could be seen. Face brick is generally in good condition without signs of spalling or excessive moisture absorption. Mortar joints are in good repair, with less than a few hundred square feet total needing re-pointing. Areas of discolored tuckpointing should be cleaned and monitored for further discoloration. All dissimilar materials abutting or penetrating the masonry walls should be properly sealed with a silicone-based or flexible building sealant including windows, mechanical and electrical piping.

Limited re-pointing work is needed at and around lintels at several window openings and at the water table course.



**Water Table Tuckpointing**



Masonry parapets with concrete caps above the low slope roof areas show evidence of water infiltration with missing or deteriorating flashing at the coping which is the likely cause of efflorescence and hairline cracking visible at the backside of parapet areas. As part of a re-roofing project, the parapet coping should be removed and re-flashed or wrapped with pre-finished metal to eliminate further water penetration into the cavity wall system.

## Part 2.1 - Worship Facility



**Efflorescence at Parapet Cap**

Foundations are poured in place concrete and floors on the main level are concrete-slab-on grade. Exposed portions of the foundation appears to be in good condition.

### **Exterior Window Systems**

Perimeter windows are a combination of pre-finished aluminum curtain wall, aluminum storefront and aluminum window systems. All are non-operable with 1" insulated glazing. At the time of the inspection, it was apparent that the south clerestory window has been re-sealed on multiple occasions. Evidence of water leaks were visible on drywall directly below the clerestory. We recommend professional evaluation to determine if weep systems are present or if flashings at the opening are compromised to eliminate continued water infiltration and potential air leakage.

Adding full height automated window treatments along the south facing windows is recommended. Operable window treatments such as a roller shade will help reduce glare, improve ambient temperate comfort levels and reduce utility costs.

### **Exterior Doors and Frames**

Exterior doors and frames are pre-finished aluminum, all in good physical condition. The church is an assembly space and primary exterior egress doors are equipped with appropriate panic hardware. At the time of the inspection, exterior door hardware was in proper working condition. With continued maintenance, the exterior doors, frames and hardware are expected to last at least another 20 years.

## Part 2.1 - Worship Facility

### **Interior Doors and Hardware**

Interior doors at the church are a combination of solid wood doors with and without glazing in hollow metal frames. Doors are painted and appear to be in good working condition. The church is an assembly space and primary egress doors are equipped with appropriate panic hardware. Doors to ancillary and support spaces are equipped with ADA compliant level handles. Other hardware such as hinges and door closers appear to be heavy-duty and are in good working condition. With continued maintenance, interior doors and hardware are expected to last at least another 20-30 years.

### **Interior Finishes**

Generally, the interior finish materials are durable, and well suited for use in the worship environment. The condition of finishes is consistent with the age of this facility, and most have been well maintained. The general cleanliness and condition of the interior finishes indicates that maintenance is a priority.

Drywall throughout the building appears to be in good condition with no visible areas of stress cracks or deterioration.



**Typical finishes at church interior**

### **FLOORING**

A quarry tile floor is installed throughout the narthex, nave, sanctuary, stairs and corridors. Quarry tile is used for floors where a very durable material is required. It is also a good product for slip resistance with non-porous properties. The quarry tile is in good condition and will continue to perform with just minor repair work needed where tiles may be cracked or where grout work needs attention.

Stair treads and risers at the sanctuary platform are finished wood. The wood is in good finish condition.



## Part 2.1 - Worship Facility

Carpet in the bride's room and cry room is recommended for cleaning or replacement. We recommend replacing broadloom carpet with a carpet tile product. This may be a project to consider within the next 2-5 years.

Flooring in the toilet rooms is vinyl composition tile (VCT). The VCT is in good condition and life expectancy for this floor material is typically 25-40 years, though we do recommend the use of ceramic or porcelain tile for toilet rooms. The appropriate ceramic or porcelain tile can provide better slip resistance.

### CEILINGS

Ceilings throughout the narthex and nave are painted drywall. Ceilings are generally clean and in good condition, though several areas had visible water staining from active or former roof leaks. Regular inspection and maintenance should continue to preserve the existing nave ceiling system.

Ancillary and support spaces are suspended 2'x2' and painted gypsum board ceiling systems in good condition. Regular inspection and maintenance will preserve the existing ceiling systems.

### CHURCH PEWS

The wood pews are generally in good condition, though pews along the southern window exposure will need refinishing within the next 2-5 years. In addition to exposure from the sun, the top edge of backrests begin to show signs of wear, generally after 10-15 years of use. The cushioned seats do provide protection of the seat platform. If pews along the south wall are addressed in the next few years, it is anticipated the remainder of pews will need refinishing within the next 10 years.



Wood Pews



## Part 2.1 - Worship Facility

### ACOUSTICS

The quantity of hard surfaces in the nave is a concern for acoustics. It is recommended to review possible solutions with an acoustical consultant who may recommend to add areas of absorptive material higher on the walls.

### Mechanical Systems

There is no central heating or cooling plant. All heating, cooling, and ventilation is accomplished by packaged gas fired heating/cooling rooftop units. All rooftop units were installed in 2012 and are in very good condition with the exception of hail damage to their condenser fins. All these units are single zone, constant volume with a single individual programmable thermostat controlling each of them.

The Worship space is served by (4) rooftop units located at the four corners of the space. All four units are Carrier 48TCFD28 (Unit No. 1 serves northwest, No. 2 serves northeast, No. 3 serves southeast, No. 4 serves southwest. They each have a nominal cooling capacity of 25 tons. Each unit serves their corner area of the space plus the main floor rooms that are adjacent to the space. Underground ductwork is utilized at the main floor and distributes air through floor supply registers.

Unit No. 5 serves the first floor southwest area. It is a Carrier 48TCEA07 with a nominal capacity of 6 tons.

Unit No. 6 serves the Narthex. It is a Carrier 48TCED12 with a nominal capacity of 10 tons.

Unit No. 7 serves the second floor Rehearsal Room. It is a Carrier 48TCEA07 with a nominal capacity of 6 tons.

Unit No. 8 serves the Chapel, Confessional, and Eucharist Chapel. It is a Carrier 48TCED12 with a nominal capacity of 10 tons.

### Electrical Systems

The building is served by a pad mounted utility transformer located on the south side of the worship facility. The electrical service enters the building and terminates in a Square D switchboard located on the upper level main electrical room. The electrical service is rated 800 amperes at 480/277V-3Ph. It is protected by an external surge protective device mounted adjacent to the switchboard. The switchboard contains fusible switches serving HVAC units and step-down transformers feeding lighting/receptacle panels. Lighting/receptacle panels distribute power throughout the facility and contain circuit breakers. The switchboard and panels are in good condition with available spare spaces for additional loads in the future. Thermal imaging service is recommended at the switchboard and panels as a preventative measure to ensure all connections are secure and properly terminated.

There are various types of fixtures installed inside the facility including 2'x2' lay-in troffer, 2'x4' lay-in troffer, round downlights, strip lights, decorative pendant bowls, pendant downlights, and decorative wall sconces. The majority of the fixture contain fluorescent source with either T8 or medium base compact fluorescent lamps. The downlight pendants appear to contain halogen lamps. Some strip lights do still contain T12 lamps but they are isolated in mechanical/storage

## Part 2.1 - Worship Facility

spaces. T12 fixtures are recommended to be replaced with more energy efficient bulbs. Overall, the light levels appear to be adequate throughout the building.



**Nave Lighting**

Battery packs are located throughout the building to provide emergency lighting. Exit signs are located throughout the building and contain battery back-up. Both devices appear to be original to the building. Maintenance service is recommended to test all the batteries to ensure they are properly charged and bulbs are fully functional.

The building is protected throughout with smoke/heat detectors and audio/visual notification devices that's tied to a control panel located in the upper level main electrical room. The fire alarm control panel is manufactured by Notifier and it's a conventional zoned system. The system appears to be in fair condition, however, it appears there is one spare zone available for additional devices. The system is adequate for the current building. Any future building additions or build-outs may require the control panel to be upgraded at that time.

The sound system in the main church auditorium is served from an equipment cabinet located at the upper level choir loft. The system contains mixers, amplifiers, wireless microphone transceivers and audio sources. The equipment is of commercial grade and appears to be in good condition. The church auditorium is served by ceiling and wall mounted speakers. Due to the dimensions and room finishes, there have been complaints of the overall voice quality in the space. It is recommended to have a third party sound engineer to visit the site and provide options to improve the sound system.

Telecommunications punchdown block and a single network switch are located in the upper level main electrical room. The punchdown block serves analog telephone lines and the network switch serves data outlets in the office areas. It appears the network equipment is adequate for the limited amount of network outlets required in this building.

## Part 2.1 - Worship Facility

### **Plumbing Systems**

The cold water service enters the building in a closet to the south of the main church narthex and is original to the 1992 building. The 2" water service is equipped with a Naperville City meter and 1-1/2" reduced pressure zone assembly backflow prevention device. Backflow preventer test certifications are posted and up to date. Domestic water is distributed from the service with copper domestic water piping.

Public plumbing fixtures were installed at the time of the original 1992 construction. Domestic water supply piping to these fixtures is copper. Water closets are floor mounted units with manual flush valves. Urinals are wall hung units with manual flush valves. Lavatories are lay in type with self closing faucets. All toilet rooms have floor drains. Hot water is provided by electric tank type water heaters without expansion tanks. The fixtures are all functional and in good condition.

The Sacristy toilet room water closet is floor mounted with an automatic sensor flush valve, lavatory is a lay-in bowl with a manual faucet. The Sacristy sink is a lay-in stainless steel bowl sink connected to the sanitary waste. The Sacristy holy water bowl sink is connected to piping that terminates to an exterior basin that allows water to return to the ground. Domestic hot water is provided by an under counter electric water heater located in the Sacristy toilet room.

Baptismal Font in the Narthex is has water circulated through a water heater and filter system that is located in the Maintenance Closet near the Crying Room. Pump has had circulation problems in the past and may need to be replaced with a larger pump.

The roof drainage storm piping system consists of cast iron roof drain bodies feeding to PVC connector piping. The PVC downspout connector piping runs to the underground storm system which then terminates to City storm mains at the street.

### **Fire Protection System**

The Church building fire protection service enters the building in a closet to the south of the main church narthex and is original to the 1992 building. The 6" fire service is equipped with a 4" reduced pressure zone assembly backflow prevention device. Backflow preventer test certifications are posted and up to date. An antifreeze sprinkler branch serving the connection hallway to the Parish Administration building is fed and filled from the same water service closet as the main fire protection water service.





The entire Church Building is protected by a wet pipe sprinkler system fed though black iron and galvanized sprinkler piping. Sprinkler heads are concealed pendant in most public spaces. Sprinkler heads in mechanical and storage rooms are exposed upright heads.

Fire department connection is located on southwest corner of Church building adjacent to the connecting hallway to the Parish Administration Building.

Sprinkler system appears to be in good condition.


**St. Raphael Parish**  
Physical Facility Assessment

## Part 2.2 – Worship Facility



<b>Building Functionality</b>				
<b>Item</b>	<b>Evaluation Item</b>	<b>Rating</b>	<b>Priority</b>	<b>Comment</b>
1	Seating capacity meets current and 10-year projected needs	A		
2	Facility adequately accommodates number of weekend masses	A		
3	Facility adequately accommodates weekday masses	A		
4	Facility is valued and reflective of community	A		
5	Location of church is near parish offices, meeting spaces and away from disruptive noises	A		
6	The following spaces are designed and arranged to support the activities and use that need to occur:			
6.1	Narthex	A		
6.2	Nave	A		
6.3	Sanctuary	A		
6.4	Adoration Chapel	A		
6.5	Working Sacristy	B		Consider Renovating
6.6	Vesting Sacristy	A		
6.7	Cry Room / Bride's Room	B		Consider Renovating
6.8	Music Ministry / Choir (loft)	C		Consider eliminating use of mechanical/storage rooms and better use of existing space. Consider replacing portable choir loft risers with permanent structure.
6.9	Confessional(s)	A		
7	Narthex is conducive for gathering and socialization	A		
8	A separate space is provided for adoration	A		
9	Font is symbolically located	A		
10	Pews are in good finish condition and comfortable	B		Refinishing recommended within 5-10 years. Pews are not provided with kneelers.
11	Sanctuary furnishings are appropriate	A		
12	Sacristy storage is adequate	A		
13	Art/Environment storage is adequate	A		
14	Nave acoustics / sound system	D		Speech legibility is poor. Audio system and speakers replaced within the last 5yrs.
15	Confessionals are adequately sound isolated	A		
16	The front entrance of the church is easy to identify and access	A		
17	Building layout provides separation for simultaneous use	A		

**St. Raphael Parish**  
Physical Facility Assessment







## Part 2.2 – Worship Facility

18	Entrances / exits are located to permit efficient flow	A		
19	Number, size and appearance of restrooms is adequate	B		Consider Renovating. Provide changing tables.
20	Building is barrier-free [handicapped accessible], both externally and internally	A		

### Roofing System – Gabled Areas






Item	Evaluation Item	Rating	Priority	Comment
1	Concrete Tiles	C		Age
2	Flashings	B		Age
3	Equipment curbs	N/A		
4	Copings, gravel stops and fascia	B		
5	Gutters and downspouts	N/A		
6	Skylights (clerestories)	B		
7	Roof drains	N/A		
8	Vent stacks	N/A		





### Roofing System – Low Slope Areas

Item	Evaluation Item	Rating	Priority	Comment
1	Modified Bitumen	C		Age
2	Flashings	C		Age
3	Equipment curbs	C		Age
4	Copings, gravel stops and fascia	C		Evidence of water infiltration, leaking
5	Gutters and downspouts	N/A		
6	Skylights	N/A		
7	Roof drains	C		Clean
8	Vent stacks	C		Age

**St. Raphael Parish**  
Physical Facility Assessment

## Part 2.2 – Worship Facility

<b>Exterior Walls, Foundations and Structure</b>				
<b>Item</b>	<b>Evaluation Item</b>	<b>Rating</b>	<b>Priority</b>	<b>Comment</b>
1	Exposed foundation systems	A		
2	Grade slopes uniformly away from foundations	B		Fill low spots at concrete stoops along north elevation
3	Masonry units	B		Address water infiltration, cracks at parapet
4	Tuckpointing	B		Address water infiltration, cracks at parapet
5	Sealants	B		Limited resealing needed at windows, doors
6	Cavity wall weeps, ropes and drip edge	C		Inadequate or missing in several areas
7	Soffits/roof edge	A		
8	Through-wall penetrations (louvers, vents)	N/A		



<b>Exterior Windows</b>				
<b>Item</b>	<b>Evaluation Item</b>	<b>Rating</b>	<b>Priority</b>	<b>Comment</b>
1	Quantity of windows contributes to a pleasant environment	A		
2	Maintenance free (aluminum)	A		
3	Glazing is Low-E/Multiple Pane/Energy efficient	A		
4	Perimeter Sealants	B		Limited resealing needed at windows, doors
5	Masonry Lintels	B		Seal where required
6	Masonry sills	B		Repair/replace cracked sills
7	Operable	N/A		
8	Screens	N/A		
9	Clerestory windows at Nave	C		Replace glazing with damaged seals (south dormer)

**St. Raphael Parish**  
Physical Facility Assessment

## Part 2.2 – Worship Facility


Exterior Doors and Frames				
Item	Evaluation Item	Rating	Priority	Comment
1	Maintenance free (aluminum)	A		
2	Doors with glazing are Low-E/Multiple Pane/Energy efficient	A		
3	Perimeter Sealants	A		
4	Lintels	A		
5	Thresholds	A		
6	Door closers	A		
7	Door Hardware (operable and barrier-free)	A		

Interior Doors and Hardware				
Item	Evaluation Item	Rating	Priority	Comment
1	Maintenance free	A		
2	Occupied spaces provided with glazing for visibility	A		
3	Door closers (where equipped)	A		
4	Door Hardware (operable and barrier-free)	A		










Interior Finishes				
Item	Evaluation Item	Rating	Priority	Comment
1	Painted wall finishes	A		
2	Painted ceiling finishes	A		Limited areas of roof leak staining visible
3	Acoustical ceilings finishes	A		Limited areas of roof leak staining visible
4	Floor coverings are appropriate for the intended use	A		
5	Carpet	B		Consider limited areas of replacement including Cry Room / Bride's Room / Sacristy
6	Tile (quarry tile, resilient tile at toilet rooms)	A		
7	Wall to floor base	A		
8	Stair treads, risers, nosings	A		
9	Built-in cabinetry/casework	B		Consider updating and reconfiguration in Sacristy
10	Toilet partitions	B		

**St. Raphael Parish**  
Physical Facility Assessment

## Part 2.2 – Worship Facility

11	Building details, color schemes, material, and décor are aesthetically pleasing.	B		Consider renovating/updates in Cry Room / Bride's Room / Sacristy
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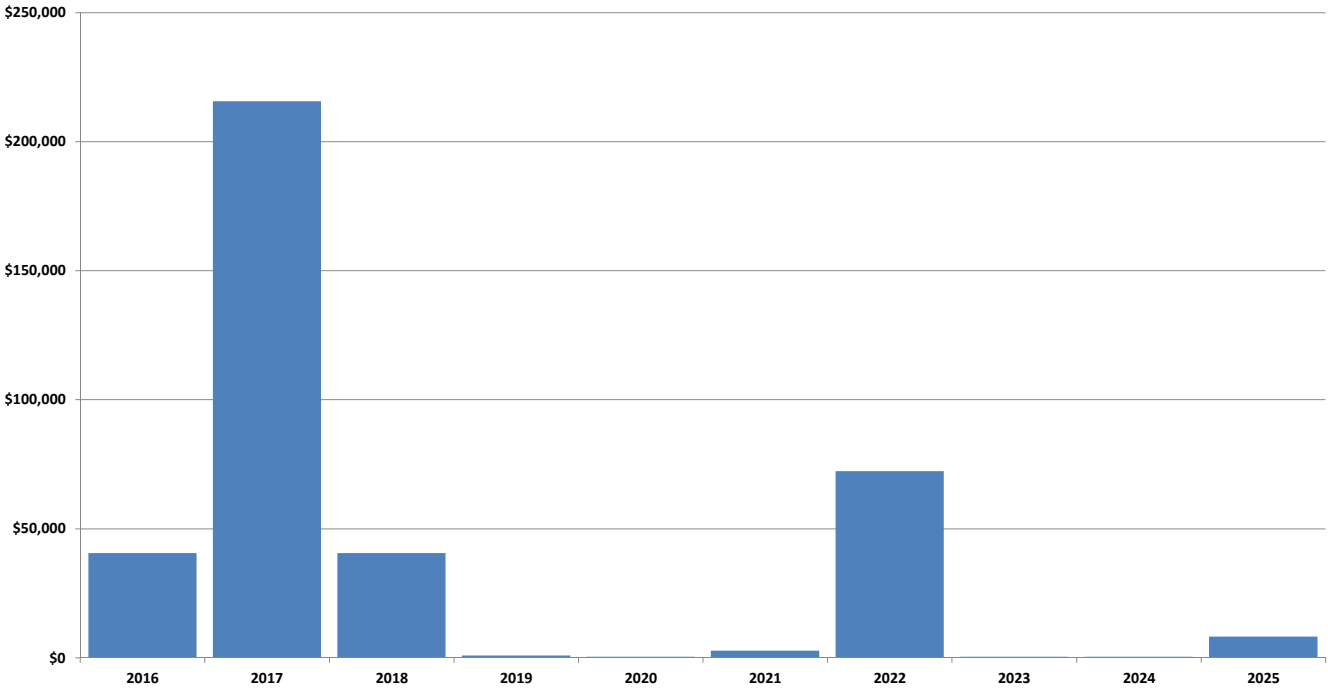
### Mechanical, Electrical & Plumbing Systems

Item	Evaluation Item	Rating	Priority	Comment
1	Year-round comfortable temperature is provided throughout the building	B		Temperature control can be improved
2	Ventilation system provides adequate circulation of clean air	A		
3	Mechanical systems operate quietly	A		
4	Exhaust systems are adequate at toilet rooms	A		
5	Mechanical systems are easy to operate and control	A		
6	Mechanical system energy-efficiency	B		Efficiency can be improved by adding CO2 control.
7	Sufficient number of electrical outlets	A		
8	Lighting is sufficient for tasks	B		Lighting can be improved in the Choral Library.
9	Light switching is conveniently located	B		
10	Lighting system energy-efficiency (occupancy sensors / automation)	N/A		Consider implementing in areas other than Nave
11	Energy efficiency of fixture lamping/ballasts	B		Consider re-lamping with 3000K LEDs at recessed lighting
12	Fire Alarm System	A		
13	Sprinkler System	A		Building is fully fire protected.
14	Water closets (toilets) and urinals are low-flow/water saving	B		Low flow would conserve water, but may cause clogs with older sanitary piping.
15	Lavatories are metered or low-flow/water saving	B		



PHYSICAL FACILITY ASSESSMENT  
RECOMMENDED ACTIONS COST SUMMARY

St. Raphael Parish											
Part 2.3 - Worship Facility	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Subtotal
Building Functionality											\$0
Roof System											
Roofing System - Gabled Areas											\$0
Roofing System - Repair/Replace Low Slope Areas (12,000sf)	\$5,000	\$110,000									\$115,000
Roofing System - Annual Inspection	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$2,500
Exterior Walls, Foundations and Structure											
General grading/fill low spots			\$1,000								\$1,000
Sealants/caulking	\$2,500					\$2,000				\$2,500	\$7,000
Masonry repairs/tuckpointing	\$3,000	\$25,000								\$4,000	\$32,000
Exterior Windows											
Clerestory window	\$8,000										\$8,000
Exterior Doors and Frames											\$0
Interior Doors and Hardware											\$0
Interior Finishes											
Drywall repair/painting	\$6,000										\$6,000
Tile repair			\$3,500								\$3,500
Pew refinishing	\$5,000						\$60,000				\$65,000
Bride's Room/Cry Room Renovation (Carpet/paint)			\$5,000								\$5,000
Toilet Room Renovation (lavatory counters)			\$6,000								\$6,000
Working Sacristy Renovation			\$18,000								\$18,000
Mechanical, Electrical & Plumbing Systems											
Mechanical - Temperature Control Upgrades		\$20,000									\$20,000
Mechanical - condenser coils/duct cleaning		\$6,500									\$6,500
Electrical - Panel Thermal Imaging	\$2,000										\$2,000
Electrical - T8/LED Relamping	\$2,000	\$15,000									\$17,000
Plumbing - Provide water heater expansion tanks		\$3,000									\$3,000
Plumbing - Upgrade font pump				\$500							\$500
Fire Protection											\$0
Subtotal Construction Costs	\$33,750	\$179,750	\$33,750	\$750	\$250	\$2,250	\$60,250	\$250	\$250	\$6,750	\$318,000
Subtotal Soft Costs (Contingencies, Professional Fees, Staff Labor, etc.)	\$6,750	\$35,950	\$6,750	\$150	\$50	\$450	\$12,050	\$50	\$50	\$1,350	\$63,600
TOTAL PROJECT COSTS	\$40,500	\$215,700	\$40,500	\$900	\$300	\$2,700	\$72,300	\$300	\$300	\$8,100	\$381,600



## Tab 1

### Site and Parking Facilities

- 1.1 - Site and Parking Facilities Narrative
  - Site Functionality and Pedestrian Access
  - Parking Lots and Vehicular Access
  - Site Lighting
- 1.2 – Site and Parking Facilities Assessment Matrix
- 1.3 – Site and Parking Facilities Recommended Actions Cost Summary

## Tab 2

### Worship Facility

- 2.1 – Worship Facility Narrative
  - Building Functionality
  - Roofing Systems
  - Exterior Walls, Foundations and Structure
  - Exterior Windows
  - Exterior Doors and Frames
  - Interior Doors and Hardware
  - Interior Finishes
  - Mechanical, Electrical & Plumbing Systems
- 2.2 – Worship Facility Assessment Matrix
- 2.3 – Worship Facility Recommended Actions Cost Summary

## Tab 3

### Parish Offices and Meeting Facilities

- 3.1 – Parish Offices and Meeting Facilities Narrative
  - Building Functionality
  - Roofing Systems
  - Exterior Walls, Foundations and Structure
  - Exterior Windows
  - Exterior Doors and Frames
  - Interior Doors and Hardware
  - Interior Finishes
  - Mechanical, Electrical & Plumbing Systems
- 3.2 – Parish Offices and Meeting Facilities Assessment Matrix
- 3.3 – Parish Offices and Meeting Facilities Recommended Actions Cost Summary

## Tab 4

### School

- 4.1 – School Facilities Narrative
  - Building Functionality
  - Roofing Systems
  - Exterior Walls, Foundations and Structure
  - Exterior Windows
  - Exterior Doors and Frames
  - Interior Doors and Hardware
  - Interior Finishes
  - Mechanical, Electrical & Plumbing Systems
- 4.2 – School Facilities Assessment Matrix
- 4.3 – School Facilities Recommended Actions Cost Summary

## Tab 5

### MEP Systems Recommendations, Priorities and Total Estimated Costs

## Part 3.1 - Parish Offices and Meeting Facilities

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### **Building Functionality**

The 21,700sf parish office complex constructed in 2003 serves as administrative offices and meeting facilities for the parish. The building is centrally located on the parish site. Connection to the school building to the south and building setbacks to the east may necessitate any future building expansion projects occurring to the west.

The main entrance, on grade, is through a set of doors at the knuckle where parish offices meet the school building. Identification of the entry is easily ascertained from the parking area and landscaping near the entrance is attractive and well maintained. Upon entrance, visitors find themselves in a roomy, natural-lit, welcoming lobby space. Wayfinding signage is smart and easily seen.



**Entrance Lobby**

The parish office complex includes several suites including the main parish administrative offices, youth faith formation, adult faith formation, service ministry, pastoral care and maintenance offices. Work areas appear to be well organized and clustered around conference spaces and work, storage and file rooms. It was observed that an additional set of public toilet rooms at the north end of the parish office complex near the large meeting room would be ideal and may be consideration worthwhile at some point in the future.

### **Roofing System**

Roofing at the parish office building is primarily a single level, low sloped modified bitumen roof system with granular cap sheet over metal deck and steel structure. Similar roof material occurs above higher volume spaces at the child care and large meeting rooms. An asphalt shingled shed roof occurs above the stairs immediately north of the lobby area. Roofing is original to the 2003 addition.

## Part 3.1 - Parish Offices and Meeting Facilities

The low slope modified bitumen roof system is generally in fair condition with signs of patching, only minor areas of ponding, and seam deterioration consistent with the age of the roofing. This type of roof system has a life expectancy of 15-20 years. Masonry parapets with concrete caps above a majority of the low slope roof areas received recent work. Flashings appear to be repaired to minimize or eliminate further water penetration into the cavity wall system below. Additional flashing work is needed to prevent water infiltration through exposed CMU at the backside of the parapet at upper roof areas.



**Exposed CMU at upper roof area**

Both the pitched roof above the stair and the low slope modified bitumen roof systems slope to internal roof drains connected to the storm sewer system. Roof drains should be cleaned and inspected for proper operation quarterly.

The roof system at this area of the building is expected to last 5 to 8 more years and should be budgeted within the next 5-10 years for complete replacement. Regular inspection and maintenance is recommended to address areas of deterioration and ponding. We recommend immediately addressing perimeter flashings to prevent accelerated deterioration of the roof system and the structure and finishes below.

### **Exterior Walls, Foundation and Structure**

The parish office building is steel frame with face brick veneer over CMU backup on concrete foundations. Wall construction is a cavity wall system. A continuous stainless steel drip is in place at the bottom of the wall. Weeps and rope were generally visible at the damp course flashing (bottom of the wall) and above openings. Face brick is generally in good condition without signs of spalling or excessive moisture absorption. Mortar joints are in good repair, with less than a hundred square feet total needing re-pointing. Areas of discolored tuckpointing should be cleaned and monitored for further discoloration. All dissimilar materials abutting or penetrating the masonry walls should be properly sealed with a silicone-based or flexible building sealant including windows, mechanical and electrical piping.



## Part 3.1 - Parish Offices and Meeting Facilities



**Typical exterior masonry and aluminum windows**

Foundations are poured in place concrete and floors on the main level are a combination of concrete-slab-on grade and pre-cast planks over sublevel areas. Exposed portions of the foundation appear to be in good condition.

## Part 3.1 - Parish Offices and Meeting Facilities

### **Exterior Windows**

Exterior windows are a combination of fixed and operable Kawneer pre-finished aluminum windows with 1" insulated glazing. Observations made at glazing seals include shrinking gaskets which should be further evaluated by a manufacturer's representative for repair or replacement.



**Shrinking / deformed perimeter gaskets**

### **Exterior Doors and Frames**

Exterior doors and frames are pre-finished aluminum, all in good physical condition. The church is an assembly space and primary exterior egress doors are equipped with appropriate panic hardware. At the time of the inspection, exterior door hardware was in proper working condition. With continued maintenance, the exterior doors, frames and hardware are expected to last at least another 30 years.

### **Interior Doors and Hardware**

Interior doors at the office are a combination of solid wood doors with and without glazing in hollow metal frames. Doors are stained and frames are painted. All appear to be in good working condition. Primary egress doors are equipped with panic hardware. Doors to ancillary and support spaces are equipped with ADA compliant lever handles. Other hardware such as hinges and door closers appear to be heavy-duty and are in good working condition. With continued maintenance, interior doors and hardware are expected to last at least another 30-40 years.

## Part 3.1 - Parish Offices and Meeting Facilities



**Typical interior door and hardware**

### **Interior Finishes**

The interior finishes throughout parish office are generally in good condition. It is clear that regular maintenance and care of the interior finishes is undertaken on a regular basis to create a clean and positive environment. The corridors and offices appear to be freshly painted and in excellent condition.

Drywall throughout the building appears to be in good condition with no visible areas of stress cracks or deterioration.

### **FLOORING**

In general the floor finishes in the building are in good condition and well maintained. Flooring throughout corridor is vinyl composition tile (VCT). Life expectancy for this floor material is 25-40 years. Flooring throughout many offices, the large meeting room, and the child care room is newer luxury vinyl tile (LVT). Life expectancy for LVT is 20-30 years.

Carpet in the reception area, library, conference and smaller meeting rooms is a commercial grade short loop carpeting with rubber base in good condition, with some spot cleaning needed. When the time comes, we recommend replacing broadloom carpet with a carpet tile product.



## Part 3.1 - Parish Offices and Meeting Facilities

### CEILINGS

Ceilings throughout painted drywall and suspended 2'x2' acoustical tile. Ceilings are clean and in good condition, though several areas had visible water staining from active or former roof leaks. Regular inspection and maintenance will preserve the ceiling system.

### BUILT-IN CASEWORK

Built-in casework within offices and meeting rooms is wood veneer with plastic laminate tops. Casework is attractive and in good condition. We do recommend making minor modifications to the interior of the base cabinets in the mail room and the copy room to maximize storage capacity. This may include adding additional adjustable shelves or pull-out drawers to make reach easier.



Consider additional shelves or pull-out drawers to improve storage capacity



### **Mechanical Systems**

The Parish Administration building has no central heating or cooling plant. All heating, cooling, and ventilation is accomplished by four (4) packaged gas fired heating/cooling rooftop units. All rooftop units have hail damage to their condenser fins. Some supplemental electric resistance heaters are utilized to serve areas not served by the rooftop units.

The first floor office wing is served by three rooftop units. Rooftop Unit No. 1 is a Carrier 48TCED12 with nominal 10 tons cooling capacity, was installed in 2012, and is in very good condition. Rooftop Unit No. 2 is a Carrier 48TFF012 with nominal 10 tons cooling capacity and was installed in 2001 and is in fair condition. Rooftop Unit No. 3 is a Carrier 48TFF012 with nominal 10 tons cooling capacity and was installed in 2001 and is in fair condition. These units serve both interior and perimeter spaces – the perimeter spaces have north, east, and west exposures with varying solar loads throughout the day. Many of the spaces also have differing occupancy loads throughout the day. In an attempt to provide some measure of temperature control, some averaging thermostats have been installed, however the result has fallen short of solving the temperature control problems.



## Part 3.1 - Parish Offices and Meeting Facilities

The lower level Activity Center is served by Rooftop Unit No. 4 which is a Carrier 48TJF024. It has nominal 20 tons capacity, was installed in 2001, and is in fair condition. It is controlled by a programmable thermostat.

### **Electrical Systems**

Electrical loads in the Parish Administration building are mainly served from (2) lighting/receptacle panels fed from 1200A, 208/120V-3Ph electrical service in the basement level of the school building. The panels appear to be in good condition. Quantity of receptacles appear to be adequate in each of the spaces.

There are various types of fixtures installed inside the facility including 2'x2' lay-in troffer, 2'x4' lay-in troffer, 1'x4' wraparounds, round downlights, strip lights. All the fixtures contain fluorescent source with either T8 or pin based compact fluorescent lamps. Overall, the light levels appear to be adequate. The library and meeting room contain occupancy sensor devices to turn off the lights when unoccupied. Considerations could be made to install occupancy sensors in the rest of the office spaces to save energy.

Battery packs are installed to provide emergency lighting. Exit signs are contain battery back-up and appear to be adequately located. Both devices appear to be in good condition. Maintenance service is recommended to test all the batteries to ensure they are properly charged and bulbs are fully functional.

The building is protected throughout with smoke/heat detectors and audio/visual notification devices that are tied to a control panel located in the basement level of the school building. The fire alarm control panel is manufactured by Notifier and it's an addressable system. The system appears to be in good condition and the devices appear to be adequately installed through the Parish Administration building.

### **Plumbing Systems**

The Parish Administration building water supply is fed from the School Building incoming domestic water supply located in the basement of Building C. Domestic water is distributed throughout the building with copper domestic water piping.

Domestic water for the Parish Administration building is provided by a 40 gallon tank type water heater rated at 40,000 BTU installed on 4-21-15. Domestic hot water heater has an expansion tank and recirculation pump. The water heater supplies the office area sinks, child care and meeting room. Toilet rooms to the south appear to be fed with hot water from the school building.

Public plumbing fixtures are all of commercial quality. Water closets are wall hung units with manual flush valves. Urinals are wall hung units with manual flush valves. Lavatories are lay in type with self closing and electronic faucets. Child care area has a toilet room with a floor mounted flush valve water closet and single wall hung lavatory. All toilet rooms have floor drains. Work room sinks are stainless steel lay-in sinks with manual faucets. The Meeting Room has a stainless steel sink and two dishwashers. During the review meeting it was discussed that the Meeting Room has run out of hot water when the dishwashers and sink have been used heavily. The fixtures are all functional and in good condition.

## Part 3.1 - Parish Offices and Meeting Facilities

### **Fire Protection System**






The Parish Administration building is protected by a wet pipe sprinkler system fed through black iron sprinkler piping. Sprinkler heads are concealed pendant in most public spaces. Sprinkler heads in mechanical and storage rooms are exposed upright heads.

The sprinkler system is fed from the fire protection service located in the basement of the School Building.

The sprinkler system appears to be in good condition.





**St. Raphael Parish**  
Physical Facility Assessment







## Part 3.2 – Parish Offices and Meeting Facilities



<b>Building Functionality</b>				
<b>Item</b>	<b>Evaluation Item</b>	<b>Rating</b>	<b>Priority</b>	<b>Comment</b>
1	Facility adequately accommodates large and small group meetings	B		Additional flexible use/large group areas may be needed
2	Facility is valued and reflective of community	A		
3	Location of parish offices and meeting spaces is near church and away from disruptive noises	A		
4	The following spaces are designed and arranged to support the activities and use that need to occur:			
4.1	Reception	A		
4.2	Parish Offices	A		
4.3	Work Room	A		
4.4	Pastoral Care / Service Ministry	A		
4.5	Adult Faith Formation	A		
4.6	Youth Faith Formation	A		
4.7	Small Group Meeting Rooms	A		
4.8	Large Group Meeting Rooms	B		Additional flexible use/large group areas may be needed
4.9	Gym/Fr. Condon Center	B		Proximity to church may be a deterrent for certain use
4.10	Kitchen	B		Current size and location may be limiting use. Consider kitchen with a large group meeting space.
5	Reception area is conducive for gathering and socialization	A		
6	Table and chair storage is adequate	A		
7	The main entrance is easy to identify and access	A		
8	Building layout provides separation for simultaneous use	A		
9	Entrances / exits are located to permit efficient flow	A		
10	Number, size and appearance of restrooms is adequate	B		Proximity to toilet rooms is limited at north end of Parish Office complex
11	Custodial closets are conveniently located and sufficiently equipped	A		
12	Building is barrier-free [handicapped accessible], both externally and internally	A		

**St. Raphael Parish**  
Physical Facility Assessment

## Part 3.2 – Parish Offices and Meeting Facilities

Roofing System – Low Slope Areas				
Item	Evaluation Item	Rating	Priority	Comment
1	Membrane	B		Age
2	Flashings	B		Age
3	Equipment curbs	B		Age
4	Copings, gravel stops and fascia	A		Recent work completed
5	Gutters and downspouts	N/A		
6	Skylights	B		
7	Roof drains	A		
8	Vent stacks	B		Age

Exterior Walls, Foundations and Structure				
Item	Evaluation Item	Rating	Priority	Comment
1	Exposed foundation systems	A		
2	Grade slopes uniformly away from foundations	B		Fill low spots
3	Masonry units	B		Address water infiltration, cracks
4	Tuckpointing	B		Address water infiltration, cracks
5	Sealants	B		Limited resealing needed at windows, doors
6	Cavity wall weeps, ropes and drip edge	C		Inadequate or missing in several areas
7	Soffits/roof edge	B		Early water damage noted in several areas
8	Through-wall penetrations (louvers, vents)	N/A		

Exterior Windows				
Item	Evaluation Item	Rating	Priority	Comment
1	Quantity of windows contributes to a pleasant environment	A		
2	Maintenance free (aluminum)	A		
3	Glazing is Low-E/Multiple Pane/Energy efficient	A		
4	Perimeter Sealants	B		Shrinking glazing gaskets
5	Masonry Lintels	B		Seal where required
6	Masonry sills	A		
7	Operable	A		
8	Screens	N/A		




**St. Raphael Parish**  
Physical Facility Assessment

## Part 3.2 – Parish Offices and Meeting Facilities








Exterior Doors and Frames				
Item	Evaluation Item	Rating	Priority	Comment
1	Maintenance free (aluminum)	A		
2	Doors with glazing are Low-E/Multiple Pane/Energy efficient	A		
3	Perimeter Sealants	A		
4	Lintels	A		
5	Thresholds	A		
6	Door closers	A		
7	Door Hardware (operable and barrier-free)	A		

Interior Doors and Hardware				
Item	Evaluation Item	Rating	Priority	Comment
1	Maintenance free	A		
2	Occupied spaces provided with glazing for visibility	A		
3	Door closers (where equipped)	A		
4	Door Hardware (operable and barrier-free)	A		

Interior Finishes				
Item	Evaluation Item	Rating	Priority	Comment
1	Painted wall finishes	A		
2	Painted ceiling finishes	A		
3	Acoustical ceilings finishes	A		Limited areas of roof leak staining visible
4	Floor coverings are appropriate for the intended use	A		
5	Carpet	A		
6	Tile (resilient flooring)	A		
7	Wall to floor base	A		
8	Stair treads, risers, nosings	A		
9	Built-in cabinetry/casework	B		Consider adjustments to maximize storage in work room areas
10	Toilet partitions	A		
11	Building details, color schemes, material, and décor are aesthetically pleasing.	A		

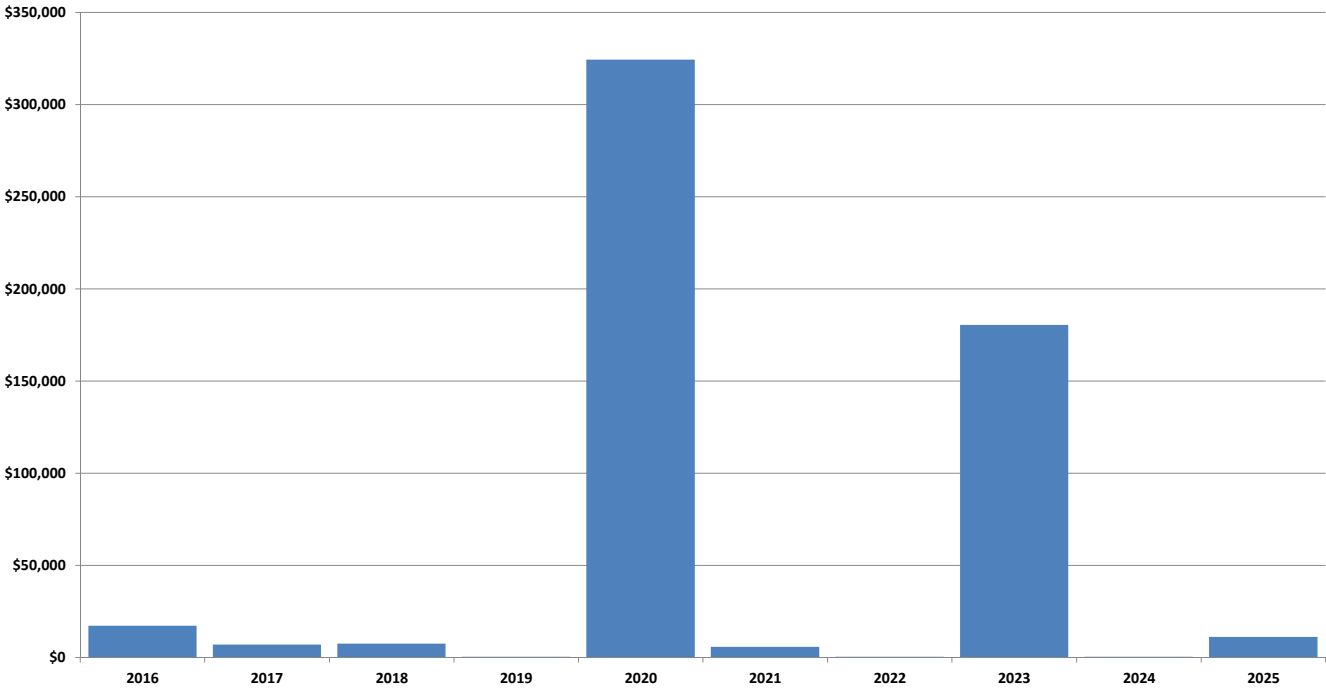
**St. Raphael Parish**  
Physical Facility Assessment

## Part 3.2 – Parish Offices and Meeting Facilities

<b>Mechanical, Electrical &amp; Plumbing Systems</b>				
<b>Item</b>	<b>Evaluation Item</b>	<b>Rating</b>	<b>Priority</b>	<b>Comment</b>
1	Year-round comfortable temperature is provided throughout the building	C		The number of zones of temperature control is severely lacking.
2	Ventilation system provides adequate circulation of clean air	A		
3	Mechanical systems operate quietly	A		
4	Exhaust systems are adequate at toilet rooms	A		
5	Mechanical systems are easy to operate and control	A		
6	Mechanical system energy-efficiency	B		System could be more efficient if more zones of control were added and if CO2 sensors were utilized.
7	Sufficient number of electrical outlets	A		
8	Lighting is sufficient for tasks	A		
9	Light switching is conveniently located	A		
10	Lighting system energy-efficiency (occupancy sensors / automation)	N/A		Consider implementing occupancy sensors or automation system
11	Energy efficiency of fixture lamping/ballasts	B		Consider replacement with LEDs
12	Fire Alarm System	A		
13	Sprinkler System	A		Building is fully fire protected.
14	Water closets (toilets) and urinals are low-flow/water saving	B		Low flow would conserve water, but may cause clogs with older sanitary piping.
15	Lavatories are metered or low-flow/water saving	B		

PHYSICAL FACILITY ASSESSMENT  
RECOMMENDED ACTIONS COST SUMMARY

St. Raphael Parish											
Part 3.3 - Parish Offices and Meeting Facilities	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Subtotal
Building Functionality											\$0
Roof System											
Roofing System - Repair/Replace Low Slope Areas (18,500sf)	\$5,000							\$150,000			\$155,000
Roof Flashings	\$4,000										\$4,000
Roofing System - Annual Inspection	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$2,500
Exterior Walls, Foundations and Structure											
General grading/fill low spots			\$1,000								\$1,000
Sealants/caulking		\$1,000				\$1,500				\$2,000	\$4,500
Masonry repairs/cavity wall work/tuckpointing		\$4,500								\$2,000	\$6,500
Exterior Windows											
Gasket repairs/replacement	\$4,000										\$4,000
Exterior Doors and Frames											\$0
Interior Doors and Hardware											\$0
Interior Finishes											
General drywall repair/painting			\$2,500			\$3,000				\$5,000	\$10,500
Casework storage improvements			\$2,500								\$2,500
Mechanical, Electrical & Plumbing Systems											
Mechanical - Replace rooftop units 2&3					\$25,000						\$25,000
Mechanical - Replace rooftop unit 4					\$30,000						\$30,000
Mechanical - HVAC temperature control/duct improvements					\$215,000						\$215,000
Electrical - T8/LED Relamping											\$0
Plumbing - Investigate/repair low water flow Meeting Room	\$1,000										\$1,000
Fire Protection											\$0
Subtotal Construction Costs	\$14,250	\$5,750	\$6,250	\$250	\$270,250	\$4,750	\$250	\$150,250	\$250	\$9,250	\$461,500
Subtotal Soft Costs (Contingencies, Professional Fees, Staff Labor, etc.)	\$2,850	\$1,150	\$1,250	\$50	\$54,050	\$950	\$50	\$30,050	\$50	\$1,850	\$92,300
TOTAL PROJECT COSTS	\$17,100	\$6,900	\$7,500	\$300	\$324,300	\$5,700	\$300	\$180,300	\$300	\$11,100	\$553,800



## Tab 1

### Site and Parking Facilities

- 1.1 - Site and Parking Facilities Narrative
  - Site Functionality and Pedestrian Access
  - Parking Lots and Vehicular Access
  - Site Lighting
- 1.2 – Site and Parking Facilities Assessment Matrix
- 1.3 – Site and Parking Facilities Recommended Actions Cost Summary

## Tab 2

### Worship Facility

- 2.1 – Worship Facility Narrative
  - Building Functionality
  - Roofing Systems
  - Exterior Walls, Foundations and Structure
  - Exterior Windows
  - Exterior Doors and Frames
  - Interior Doors and Hardware
  - Interior Finishes
  - Mechanical, Electrical & Plumbing Systems
- 2.2 – Worship Facility Assessment Matrix
- 2.3 – Worship Facility Recommended Actions Cost Summary

## Tab 3

### Parish Offices and Meeting Facilities

- 3.1 – Parish Offices and Meeting Facilities Narrative
  - Building Functionality
  - Roofing Systems
  - Exterior Walls, Foundations and Structure
  - Exterior Windows
  - Exterior Doors and Frames
  - Interior Doors and Hardware
  - Interior Finishes
  - Mechanical, Electrical & Plumbing Systems
- 3.2 – Parish Offices and Meeting Facilities Assessment Matrix
- 3.3 – Parish Offices and Meeting Facilities Recommended Actions Cost Summary

## Tab 4

### School

- 4.1 – School Facilities Narrative
  - Building Functionality
  - Roofing Systems
  - Exterior Walls, Foundations and Structure
  - Exterior Windows
  - Exterior Doors and Frames
  - Interior Doors and Hardware
  - Interior Finishes
  - Mechanical, Electrical & Plumbing Systems
- 4.2 – School Facilities Assessment Matrix
- 4.3 – School Facilities Recommended Actions Cost Summary

## Tab 5

### MEP Systems Recommendations, Priorities and Total Estimated Costs



## Part 4.1 - School

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### **Building Functionality**

A 37,300sf school facility is the oldest portion of the complex and is located at the south end of the campus. Portions of the original school have been renovated over the years and building additions have been added including a 9,500sf multi-classroom expansion most recently added to the west end of the school in 2003. The school office was renovated in 2015 along with recent renovations to the science and computer labs on the second floor and the De LaSalle room on the lower level.



**School**

The school office is centrally located between the academic wing and the gymnasium. The office includes an adequately sized reception office, sick room, several offices and a mail room. An elevator accessing all three levels of the school is conveniently located adjacent to the main office and lobby area.

**St. Raphael Parish**  
Physical Facility Assessment

**Part 4.1 - School**



**School Office**

Improvements have been made to provide a secured public entry arrangement near the main office along with security provisions isolating the school from daily ongoing parish activities. The features include physical locked doors, fob readers and security cameras.



**Security Provisions**



**St. Raphael Parish**  
Physical Facility Assessment

## Part 4.1 - School

The academic wing consists of a double-loaded corridor arrangement with five original classrooms on two levels. The 2003 addition to the west, also double-loaded, added space for a kindergarten and library on the main floor, along with an art room and teacher's lounge on the lower level, an additional grade level classroom on the upper level along with several small group instruction rooms. It is our understanding current enrollment averages 310 students, equating to just over 150sf per student. This is slightly above the average of 120 to 130sf which we typically see in modern public schools. This additional square footage offers many opportunities with the ongoing academic programs and is a pleasure to see.



**Typical Classroom**

### **Roofing System**

A white EPDM roof was installed on the original section of the school in 2012. The roof membrane, skylights, pipe supports and flashings and all other components of the roofing system appear to have been installed at the same time. The roof is in 'like new' condition and if properly maintained, is expected to last 20-25 years. We recommend regular inspections and maintenance on the new roof to prolong the life expectancy of the roof system.



## Part 4.1 - School



**New Roof at Original Section of the School**

Roofing at the portion of the school added in 2003 is a low sloped modified bitumen roof system with granular cap sheet over metal deck and steel structure. The roofing is original to the addition and is generally in fair condition with signs of patching at copings, flashings and seam deterioration consistent with the age of the roofing. Granulated roofing is a common top or exposed layer in many built-up roofing systems as it is relatively inexpensive to install. This type of roof system has a life expectancy of 15-20 years.

A white elastomeric coating was applied at some point in the recent past. The coating extends the service life, protecting the surface granules and helping to seal lap seams. The roof system at this area of the building is expected to last 3-5 more years and should be budgeted within the next 5 years for complete replacement. Regular inspection and maintenance is recommended especially at the perimeter flashings and at the parapet where previous joint sealants have been applied as an attempt to divert water infiltration.

### **Exterior Walls, Foundation and Structure**

The exterior walls of the school building are constructed of CMU with face brick. The original portion of the building was built during an era pre-dating common cavity wall design meaning it does not contain a moisture weeping system. The mass of the wall provides some thermal insulation, but insulation material itself is likely not present. All dissimilar materials abutting or penetrating the masonry walls should be properly sealed with a silicone-based or flexible building sealant including windows, mechanical and electrical piping.

The primary concern at this portion of the building includes the deteriorating ends of the pre-cast roof structure and masonry tuckpointing needs at entry stairs, ramps and the landscape planter immediately east of the gymnasium.

We recommend removal of the face brick in its entirety at the landscape planter, relining the landscape box with a waterproof membrane and re-veneering the exposed face with new masonry including a properly flashed cap piece. Removal of the landscape planter is also an option, but it



## Part 4.1 - School

would pose challenges in terms of providing an appropriate and aesthetically pleasing finish of what would be a raised foundation along the east gym wall.

The pre-cast concrete tees are another challenge. The exposed edge of the tee makes the structure vulnerable to water infiltration and the damage caused by winter freeze-thaw cycles. It is evident many tees have been repaired over the years. This will continue to be a periodic maintenance project requiring regular inspections to ensure the safety of everyone below. Short term solutions may be to continue repairing the ends (use an epoxy-based grout). Longer term solutions might include fabricating and installing pre-finished metal caps at the ends of tees or enclosing the exposed structure with a soffit. At the gymnasium, enclosure would pose an additional challenge with the clerestory windows that occur along the top portion of the wall between tees. The windows themselves though, are also an energy-savings concern and a comprehensive solution may need to be considered for the best outcome – in terms of performance and aesthetic appeal.



**Landscape planter**



**Pre-cast concrete roof members**

The 2003 addition is face brick veneer over CMU backup on a concrete foundation. Wall construction is a cavity wall system. A continuous stainless steel drip is in place at the bottom of the wall. Weeps and rope were generally visible at the damp course flashing (bottom of the wall) and above openings. Except at the exterior stairs and at the back side of the roof parapet, the face brick is generally in good condition without signs of spalling or excessive moisture absorption. Mortar joints are in good repair, with less than a hundred square feet total needing re-pointing. Areas of discolored tuckpointing should be cleaned and monitored for further discoloration. All dissimilar

## Part 4.1 - School

materials abutting or penetrating the masonry walls should be properly sealed with a silicone-based or flexible building sealant including windows, mechanical and electrical piping.

Exposed foundations, including those in the basement level appear to be in good condition with no visible areas of stress cracks or deterioration.

### **Exterior Windows**

Exterior windows at the original school building are operable steel frame single pane windows. These 50+ year old existing windows frames are non-insulated and non-thermally broken. Replacement of the windows with new aluminum windows with tinted insulated glass is recommended to improve energy efficiency and comfort levels inside. The window replacement project should be a high priority within the next 2-5 years.

Exterior windows at the 2003 addition are a combination of fixed and operable Kawneer pre-finished aluminum windows with 1" insulated glazing. Similar to windows at the parish office installed at the same time, observations made at glazing seals include shrinking gaskets which should be further evaluated by a manufacturer's representative for repair or replacement.

### **Exterior Doors and Frames**

Exterior doors and frames at the main entrance and the 2003 addition are pre-finished aluminum, all in good physical condition. The primary exterior egress doors are equipped with appropriate panic hardware. At the time of the inspection, exterior door hardware was in proper working condition. With continued maintenance, the exterior doors, frames and hardware are expected to last at least another 30 years.

The south exterior door at the playground appears to be the original steel door. Though this door is in working order, it is a non-insulated door and the weather seals are no longer adequate. Door hardware may continue to find parts for. It is recommended this door be scheduled within the next 5 years for replacement with a pre-finished aluminum door matching other newer doors on the facility.

### **Interior Doors and Hardware**

In general, the wood interior doors and hollow metal frames are in good condition. Hardware is mixed with a combination of newer ADA compliant lever handles. Older knob-type hardware is difficult to operate and repair and is not compliant with current accessibility standards. We recommend replacement of older door hardware along with conformance to a master keying system.

As is typical in older school buildings, some doors are not compliant with today's standards due to the swing distance into corridors and doors that do not have adequate push / pull dimensions adjacent to the door jamb (i.e., those at the toilet rooms). An appropriate solution may be to consider resolving these issues during future renovation or improvement projects.

## Part 4.1 - School

### **Interior Finishes**

First and foremost, the school facilities are attractive and clean, especially considering the age of the core of the facility. The interior finishes are generally in good condition. It is clear that typical maintenance and care of the interior finishes is undertaken on a regular basis to create a clean and positive learning environment. The corridors walls, columns and lockers appear to be regularly maintained and painted and in good condition.

Due to the age of the facility asbestos containing materials (ACM) may be present. A management plan should be in place to confirm any positive areas.

Drywall throughout the building appears to be in good condition with no visible areas of stress cracks or deterioration.

### **FLOORING**

Floor finishes throughout the school are in good condition and well maintained.

The VCT currently installed in the corridors is newer and in good condition.

The ceramic tile installed in the existing toilet rooms is older but in good condition. Regular thorough cleaning and maintenance of the tile and grout will prolong the lifespan of the floor tile.

### **CEILINGS**

A majority of the ceilings throughout the school are newer with suspended acoustical tile ceiling systems.

### **MISCELLANEOUS SCHOOL EQUIPMENT AND AMENITIES**

In general the classrooms are outfitted with appropriate equipment and amenities consistent with typical teaching environments in newer schools today.

The science lab casework is new.

Toilet partitions within the existing toilet rooms are in good condition and should be regularly inspected and maintained and repaired as necessary.

## Part 4.1 - School

### **Mechanical Systems**

The School Building has a central heating plant, but no central cooling plant. The central heating plant consists of (2) gas fired AO Smith Genesis Burkay hot water boilers and circulating pumps installed in 2001. Each has 1,300 MBH input and 1,092 MBH output. The boilers and pumps are in good condition.

Hot water piping serves perimeter finned tube radiation, classroom unit ventilators, cabinet unit heaters, convectors, and suspended unit heaters. Most of the hot water piping is approximately 50 years old.

Most first and second floor classrooms are heated and ventilated by Herman Nelson unit ventilators that are 50 years old and well beyond their useful life. Classrooms are cooled by window air conditioners.

The 2001 south addition is served by two packaged gas fired heating/cooling rooftop units. Each unit was installed in 2001 and is in fair condition.

Unit No. 5 is a Carrier 48TFF012 with a nominal capacity of 10 tons cooling. It serves the south side of the west addition, all 3 floors.

Unit No. 6 is a Carrier 48TFF016 with a nominal capacity of 14 tons cooling. It served the north side of the west addition, all 3 floors, plus the adjacent computer classroom in the original 1960's building.

Since these units are single zone constant volume, temperature control suffers in all rooms where the thermostat is not located. On the south side of the lower level, a large space has been sub-divided into a Teacher's Lounge and a Copy Room, but due to the new wall, return air has been cut off from the Copy Room.

The lower level Math classroom is heated by perimeter hot water finned tube radiation. It is ventilated and cooled by a Trane horizontal fan coil unit located in the adjacent storage room. The unit has capability to provide outside air ventilation. It has a DX cooling coil utilizing R-22 refrigerant and an associated Trane air cooled condensing unit with nominal 2.5 tons cooling capacity. The unit does not have heating capability so it is assumed it is operated only in the summer months. The equipment was installed in 2007 and is in good condition.

The lower level Band Room is heated by perimeter hot water finned tube radiation. It is ventilated and cooled by a Trane vertical fan coil unit located in a small closet. The unit has capability to provide outside air ventilation. It has a DX cooling coil utilizing R-410A refrigerant and an associated Trane air cooled condensing unit with nominal 2.5 tons cooling capacity. The system does not have heating capability so it is assumed it is operated only in the summer months. The equipment was installed in 2010 and is in good condition.

The lower level of the 1960's classroom building was originally ventilated by a roof mounted exhaust fan ducted to the lower level. Each room had a wall louver and motor operated damper that would open when the fan was in operation. It appears that this system has been abandoned.

The Gymnasium (original church) is heated by perimeter hot water finned tube radiation. The north wall of the gym has a large soffit with grilles on the face and there are 3 exterior wall louvers on the north face of the building. And, there are large louvers on the south wall above the doors. This leads us to believe there may be 3 exhaust fans in the soffit designed to draw air through the gymnasium from the south. We could not gain access to the soffit to verify if this system exists, or if it does if it is operational. Other than this system, the gymnasium has no ventilation and no cooling.



## Part 4.1 - School

The pneumatic temperature control system serving most of the school is antiquated. Consideration should be given to providing a Building Automation System with Direct Digital Controls for this area of the building.

### **Electrical Systems**

The building is served by a pad mounted utility transformer located on the south side of the 2-story building. The electrical service enters the building and terminates in a Siemens switchboard located in the basement level main electrical room. The electrical service is rated 1200 amperes at 208/120V-3Ph protected by bolted pressure switch. It is also protected by an external surge protective device mounted near the switchboard. The switchboard contains circuit breakers serving HVAC units and lighting/receptacle panels. Lighting/receptacle panels distribute power throughout the facility and contain circuit breakers. The switchboard and panels are in good condition with available spare spaces for additional loads in the future. Thermal imaging service is recommended at the switchboard and panels as a preventative measure to ensure all connections are secure and properly terminated.

Receptacles are provided throughout the building and appear to be adequate. Maintenance staff indicated occurrences of a circuit breaker tripping for the window air conditioning units. This is a sign of either faulty equipment, short in the circuit, or undersized overcurrent protection. This issue should be investigated and corrected for the safety of occupants and the building.

There is a natural gas 30kW generator located outside on the south side of the 2-story building. The generator provides back-up power to the sewage ejector and sump pumps.

There are various types of fixtures installed inside the facility including 2'x2' lay-in troffer, 2'x4' lay-in troffer, 1'x4' wraparounds, round downlights, strip lights and high-bay 2'x4'. All the fixtures contain fluorescent source with either T8 or pin based compact fluorescent lamps. There is one room in the basement level where the fixtures still contain T12 lamps. It is recommended to have the light be replaced with more energy efficient fluorescent lamps or LED. Overall, the light levels appear to be adequate. Considerations could be made to install occupancy sensors in all the offices and classrooms to save energy.

Battery packs are installed to provide emergency lighting. Exit signs are contain battery back-up and appear to be adequately located. Both devices appear to be in good condition. Maintenance service is recommended to test all the batteries to ensure they are properly charged and bulbs are fully functional.

The building is protected throughout with smoke/heat detectors and audio/visual notification devices that are tied to a control panel located in the basement level of the school building. The fire alarm control panel is manufactured by Notifier #AFP-200 and it's an addressable system. The system appears to be in good condition and the devices appear to be adequately installed through the school building.

The school building is served throughout with an intercom/clock system. The head-end equipment is located in the basement level main electrical room. It is manufactured by Rauland Telecenter series. The system serves call switches, speakers and clocks that are installed in typical classrooms. The intercom/clock system was installed in 2003 and is in fair condition.

## Part 4.1 - School

The gymnasium contains a stand-alone sound system dedicated to the space. It is served by two racks containing mixers, amplifiers, wireless microphone transceivers and audio sources. The equipment is of commercial grade and appears to be in good condition.

Telecommunications punchdown block and network switches are located in the basement level main electrical room with a second network distribution point located on the second floor in the computer room closet. The punchdown block serves the limited analog telephone lines in the building as VOIP is primarily used for telephone calls. VOIP phones are installed throughout the building and it appears to be in good condition. The network switches serve data outlets and the cabling standard is either CAT5E or CAT6. Data outlets are installed throughout the building and it appears to be in good condition.

Area of rescue system is installed and serves the stairwell with call stations located at the basement and second floor levels. The call stations are tied to the annunciator panel located at the front entrance adjacent to the fire alarm annunciator panel. The system is manufactured by Cornell and appears to be in good conditions.

Security cameras are installed in the corridors and cover the building entrances. It appears to be a 16-channel system and the cameras are connected to a DVR located in a Storage Room at the Administration Building. The system is functional and appears to be in good condition.

### **Plumbing Systems**

The cold water service enters the building the basement mechanical room. The 4" water service enters from the north side of the room and is equipped with a Naperville City meter and 3" reduced pressure zone assembly backflow prevention device. Backflow preventer test certifications are posted and up to date. Domestic water is distributed from the service with copper and galvanized domestic water piping.

The domestic water heater for a majority of the school building is located in the basement mechanical room with the water service. The domestic water heater is a 100 gallon gas fired 85,000 BTU water heater with expansion tank. Water heater appears to be in good condition. Date of installation unknown.

A second water heater is located on the first floor in the Janitor's closet at the connecting link to the Parish Administration wing. The domestic water heater is a 75 gallon gas fired 76,000 BTU water heater with expansion tank, recirculation pump and thermostatic mixing valve. This water heater supplies hot water for the lavatories in the Parish Administration wing group toilet rooms and Vending area. The heater also supplies water to the School Office Toilet Room and the sink Teen Room. Water heater appears to be original to the 2003 addition project.

The basement is protected from ground water infiltration by a drain tile piping system surrounding the basement level. The drain tile piping is connected to a basin containing a submersible duplex storm water ejector system located in a recessed pit in the basement Janitor Storage Room. System controls and disconnects are mounted on the wall above the recessed pit. One pump motor was replaced recently with a 2 HP motor. The original motor was a 3 HP motor. Drain tile storm ejector system has been well maintained and is in good operational condition. Pump discharge piping off of storm ejector pump system is PVC that exits through wall to gravity sewer system.

## Part 4.1 - School

The sanitary waste lines for all plumbing fixtures and drains in the basement, except for 2003 addition, terminate to a sanitary ejector pump system in a recessed pit in the basement Janitor Storage Room. System controls and disconnects are mounted on the wall above the recessed pit. Sanitary ejector pump system including control panel, check valves and butterfly valves appear to be in good condition. Pump discharge piping off of sanitary ejector pump system is PVC that exits through wall to gravity sewer system.

The sanitary waste lines for plumbing fixtures and drains from the 2003 addition, terminate to a sanitary ejector pump system a storage closet in the Art Room. System consists of a simplex sanitary pump in a recessed basin with a piggyback plug in float control and high water alarm. Sanitary ejector pump system appears to be in good condition. Pump discharge piping off of sanitary ejector pump system is cast iron that exits through ceiling to gravity sewer system.

Lower Level toilet rooms at the Activity Center appear to have been renovated recently. Plumbing fixtures are all of commercial quality. Water closets are wall hung units with manual flush valves. Urinals are wall hung units with manual flush valves. Lavatories are lay in type with self closing and electronic faucets. All toilet rooms have floor drains. The fixtures are all functional and in good condition.

The Lower Level warming kitchen is equipped with stainless steel commercial fixtures. An existing double bowl prep sink is directly connected to sanitary waste. As a food and beverage handling area, the sanitary piping should be modified to provide an indirect waste discharge consisting of an open site drain and air-gap to comply with Illinois Plumbing Code Section 890.1010a. The open site drain and air-gap ensure that sanitary waste never makes its way back to the prep bowl of the sink should there be a clog or backup in the sanitary system.



**Warming Kitchen - Direct sanitary connection at double bowl sink**

## Part 4.1 - School

First and second floor public toilet room fixtures are all of commercial quality. Water closets are wall hung units with manual flush valves. Urinals are wall hung units with manual flush valves. Lavatories are wall hung and lay in type with self closing and electronic faucets. Janitor closet service sinks have faucets with vacuum breakers. Some fixtures show age and heavy usage, but are in good operational condition.

The Janitor's closet near the School Office has service sink with a soap system and water splitter device attached to the faucet. A proper backflow prevention device is recommended at this location. Though the faucet has a vacuum breaker, Illinois Plumbing Code does not recognize these devices as being adequate for direct connection to a chemical soap mixer. A backflow prevention device at the faucet in compliance with Illinois Plumbing Code Section 890.1130 will protect against accidental contamination of the water source within the building.



**Splitter at utility sink**



**Soap system at utility sink**

Classroom sinks are stainless steel lay-in bowls with gooseneck or swing spout faucets. Sinks are functional and in good condition.

Kindergarten classroom has a toilet room with water closet and wall hung sink for younger student usage. Fixtures are in good condition.

The Gymnasium building water supply is fed from the School Building incoming domestic water supply located in the basement of Building C. Domestic water is distributed throughout the building with copper domestic water piping.

The Gymnasium building has a small pantry and serving area for events. Copper domestic water piping appears to be run underfloor to the Mechanical room at the serving area. Located in the mechanical room is a 30 gallon 4500 Watt electric hot water heater without an expansion tank.

Plumbing fixture in the kitchen area is a triple basin sink with indirect connection. Outlet waste pipe is below rim of open site drain and should be cut off above open site drain. Serving area has a single bowl stainless steel counter sink with gooseneck spout. The fixtures are all functional and in good condition.



## Part 4.1 - School

Sanitary piping for the gym kitchen is routed below the floor flowing to the north, where the line intercepts an original east/west sanitary line that also serves portions of the school to the west. The line flows east toward Modaff. The intercepting line from the kitchen forms a T-fitting that is prone to clogs and backups from stagnant food waste. Oversizing the sanitary piping below the floor and providing additional clean-outs and a proper Y-fitting at the connection to the east/west line may alleviate the problem, but repair below the finished wood floor and below the concrete floor slab would be a costly endeavor. For this reason, it is recommended to continue regular preventative maintenance every other year including rodding and flushing the sanitary line at least to the T-fitting.

### **Fire Protection System**

The School building fire protection service enters the building in the basement mechanical room. The 6" fire service is equipped with a 4" reduced pressure zone assembly backflow prevention device. Backflow preventer test certifications are posted and up to date.

The entire School Building is protected by a wet pipe sprinkler system fed through black iron and galvanized sprinkler piping. Sprinkler heads are concealed pendant in most public spaces. Sprinkler heads in mechanical and storage rooms are exposed upright heads.









Fire department connection is located on the southwest side of the School building.

The Gymnasium building is protected by a wet pipe sprinkler system fed through black iron sprinkler piping. Sprinkler heads are exposed pendant, concealed pendant and upright sprinklers with protective cages in most spaces. Areas with lay-in ceilings have concealed pendant sprinkler heads.

The sprinkler system appears to be in good condition.




**St. Raphael Parish**  
Physical Facility Assessment

## Part 4.2 - School

<b>Building Functionality</b>				
<b>Item</b>	<b>Evaluation Item</b>	<b>Rating</b>	<b>Priority</b>	<b>Comment</b>
1	Classrooms provided for Preschool (for 3 and 4 year-olds)	A		Space is currently available, but program is not housed. If housed in teen room, may need to add a toilet room.
2	Classrooms provided for Kindergarten	A		
3	Size of academic learning areas meets desirable standards	B		
4	Classroom space permits arrangements for small group activity	B		
5	Classrooms support the use of state-of-the-art technology (projectors, smartboards, tablet charging)	A		
6	Location of academic learning areas is near related educational activities and away from disruptive noises	A		
7	Personal space in the classroom away from group instruction allows privacy time for individual learning	B		
8	Areas provided for student socialization	B		Multi-purpose room in lower level is remote
9	The following teaching stations are designed and arranged to support the learning activities that need to occur:			
9.1	Core Academic Classrooms	A		
9.2	Special Education Resource Classrooms	A		
9.3	Art Classroom	A		
9.4	Music Room	A		
9.5	Science	A		
9.6	Gym	B		P.E. office is remote, not accessible, storage provisions could be improved
9.7	Library / Resource / Media Center provides appropriate learning and support space with focus on technology	A		
9.8	Student Dining Area is properly located and adequately sized	B		Lower level location is remote.
10	Storage for student materials/belongings is adequate (lockers)	B		Consider locker replacement
11	Storage for teacher materials is adequate	A		
12	Furniture and equipment are appropriate for instructional uses	A		
13	Rooms are adequately sound isolated	A		
14	The main office is conveniently and centrally located	A		
15	Administrative areas are in appropriate locations	A		
16	Administrative personnel are provided sufficient workspace and privacy	A		
17	Suitable reception space is available for students, teachers, and visitors	A		

**St. Raphael Parish**  
Physical Facility Assessment




## Part 4.2 - School






18	Nurse is centrally located and equipped to meet requirements	A		
19	Teacher's lounge and work areas support teachers as professionals	A		
20	Teacher work areas are adequately sized and furnished	A		
21	The front entrance of the building is easy to identify and access	A		
22	The main entry has a secured entry arrangement with visitor sign-in requirements	A		
23	Building layout provides separation between school and public/parishioner use	A		
24	Building layout provides good separation for after-hours and weekend use	B		Additional doors needed for separation (may be in progress)
25	Access to the building is effectively controlled throughout the school day	A		
26	Entrances / exits are located to permit efficient student traffic flow	A		
27	Corridor widths are adequate for student movement and easy to supervise	C		Corridors on first floor are narrow, lockers reduce overall width
28	Stairwells are adequate for student movement and easy to supervise	A		
29	Number, size and appearance of restrooms is adequate throughout the building	C		Consider renovating with improvements for accessibility
30	Custodial closets are conveniently located and sufficiently equipped	B		
31	School is barrier-free [handicapped accessible], both externally and internally	A		




Roofing System – Main Section				
Item	Evaluation Item	Rating	Priority	Comment
1	Roofing material	A		Recently replaced
2	Flashings	A		
3	Equipment curbs	A		
4	Copings, gravel stops and fascia	A		
5	Gutters and downspouts	N/A		
6	Skylights	A		
7	Roof drains	A		
8	Vent stacks	A		

**St. Raphael Parish**  
Physical Facility Assessment

## Part 4.2 - School

Roofing System – West Addition				
Item	Evaluation Item	Rating	Priority	Comment
1	Roofing material	B		Recently re-coated to extend life
2	Flashings	C		Evidence of leaking
3	Equipment curbs	A		
4	Copings, gravel stops and fascia	C		Evidence of water infiltration, leaking
5	Gutters and downspouts	N/A		
6	Skylights	N/A		
7	Roof drains	A		
8	Vent stacks	A		

Exterior Walls, Foundations and Structure – Main Section				
Item	Evaluation Item	Rating	Priority	Comment
1	Exposed foundation systems	B		
2	Grade slopes uniformly away from foundations	B		Fill low spots
3	Masonry units	B		Repair needed at exterior entry ramp
4	Tuckpointing	B		Repair needed at exterior entry ramp
5	Sealants	B		
6	Cavity wall weeps, ropes and drip edge	N/A		
7	Soffits/roof edge	D		Exposed concrete tees are spalling, creating safety hazard
8	Through-wall penetrations (louvers, vents)	B		





Exterior Walls, Foundations and Structure – West Addition				
Item	Evaluation Item	Rating	Priority	Comment
1	Exposed foundation systems	B		
2	Grade slopes uniformly away from foundations	A		
3	Masonry units	A		
4	Tuckpointing	B		Repair needed at exterior stair
5	Sealants	B		
6	Cavity wall weeps, ropes and drip edge	C		Inadequate or missing in several areas (stair cap)
7	Soffits/roof edge	N/A		








**St. Raphael Parish**  
Physical Facility Assessment

## Part 4.2 - School

8	Through-wall penetrations (louvers, vents)	A		
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Exterior Windows – Main Section				
Item	Evaluation Item	Rating	Priority	Comment
1	Quantity of windows contributes to a pleasant environment	A		
2	Maintenance free	C		Consider replacing
3	Glazing is Low-E/Multiple Pane/Energy efficient	D		Single pane glazing
4	Perimeter Sealants	B		
5	Lintels	B		
6	Sills	A		
7	Operable	A		
8	Screens	A		


Exterior Windows – West Addition				
Item	Evaluation Item	Rating	Priority	Comment
1	Quantity of windows contributes to a pleasant environment	A		
2	Maintenance free	A		
3	Glazing is Low-E/Multiple Pane/Energy efficient	A		
4	Perimeter Sealants	B		Shrinking glazing gaskets
5	Lintels	A		
6	Sills	A		
7	Operable	A		
8	Screens	N/A		

Exterior Doors and Frames – Main Section				
Item	Evaluation Item	Rating	Priority	Comment
1	Maintenance free	B		Consider replacing painted hollow metal frames at south elevation
2	Doors with glazing are Low-E/Multiple Pane/Energy efficient	B		
3	Perimeter Sealants	B		
4	Lintels	B		
5	Thresholds	B		
6	Door closers	B		
7	Door Hardware (operable and barrier-free)	B		

**St. Raphael Parish**  
Physical Facility Assessment

## Part 4.2 - School

Exterior Doors and Frames – West Addition				
Item	Evaluation Item	Rating	Priority	Comment
1	Maintenance free	A		
2	Doors with glazing are Low-E/Multiple Pane/Energy efficient	A		
3	Perimeter Sealants	A		
4	Lintels	A		
5	Thresholds	A		
6	Door closers	A		
7	Door Hardware (operable and barrier-free)	A		




Interior Doors and Hardware – Main Section				
Item	Evaluation Item	Rating	Priority	Comment
1	Maintenance free	B		
2	Occupied spaces provided with glazing for visibility	B		
3	Door closers (where equipped)	B		
4	Door Hardware (operable and barrier-free)	C		Replace knob-type with lever type








Interior Doors and Hardware – West Addition				
Item	Evaluation Item	Rating	Priority	Comment
1	Maintenance free	A		
2	Occupied spaces provided with glazing for visibility	A		
3	Door closers (where equipped)	A		
4	Door Hardware (operable and barrier-free)	A		

Interior Finishes				
Item	Evaluation Item	Rating	Priority	Comment
1	Painted wall finishes	A		
2	Painted ceiling finishes	A		
3	Acoustical ceilings finishes	A		
4	Floor coverings are appropriate for the intended use	A		
5	Carpet	A		

**St. Raphael Parish**  
Physical Facility Assessment



## Part 4.2 - School

6	Tile (resilient flooring, ceramic at toilet rooms)	B		Consider renovations at toilet rooms, establish abatement plan
7	Wall to floor base	A		
8	Stair treads, risers, nosings	B		
9	Built-in cabinetry/casework	A		
10	Toilet partitions (metal)	C		Consider renovations at toilet rooms
11	Building details, color schemes, material, and décor are aesthetically pleasing.	A		

Mechanical, Electrical & Plumbing Systems				
Item	Evaluation Item	Rating	Priority	Comment
1	Year-round comfortable temperature is provided throughout the building	C		More zones of control are required in west addition. Pneumatic temperature controls are antiquated.
2	Ventilation system provides adequate circulation of clean air	B		Window air conditioners don't provide code amount of outside air to classrooms. Gymnasium has no outside air ventilation.
3	Mechanical systems operate quietly and don't disrupt learning areas	C		Window air conditioners are not suited to teaching environments.
4	Exhaust systems are adequate at toilet rooms, lunch rooms and food preparation areas	A		
5	Mechanical systems are easy to operate and control	C		Pneumatic controls are antiquated.
6	Mechanical system energy-efficiency	B		Window air conditioners are not efficient.
7	Sufficient number of electrical outlets in teaching areas	B		
8	Lighting is sufficient for tasks	A		
9	Light switching is conveniently located	A		
10	Room lighting levels can be controlled for audio-visual presentations	A		
11	Lighting system energy-efficiency (occupancy sensors / automation)	N/A		Consider implementing occupancy sensors or automation system
12	Energy efficiency of fixture lamping/ballasts	B		Consider replacement with LEDs
13	Intercom system allows dependable 2-way communication throughout the building	A		
14	Fire Alarm System	A		
15	Sprinkler System	A		Building is fully fire protected.

**St. Raphael Parish**  
Physical Facility Assessment

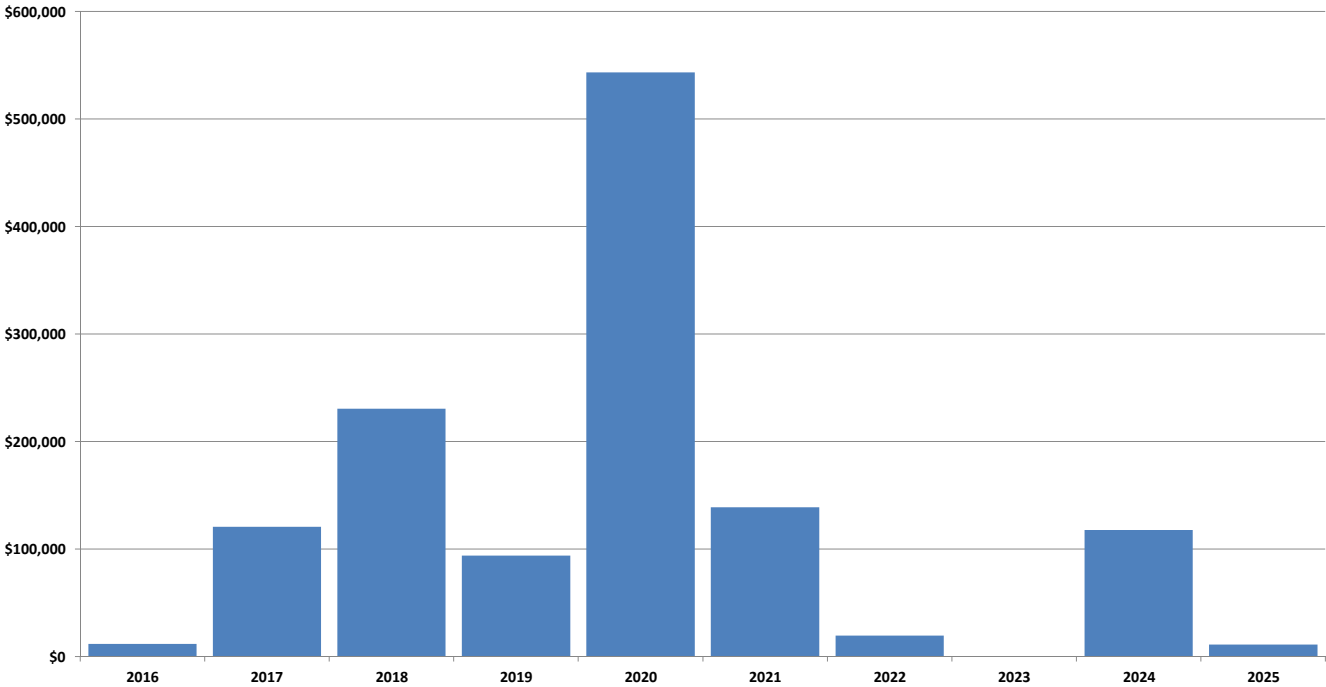
**Part 4.2 - School**

16	Water closets (toilets) and urinals are low-flow/water saving	B		Low flow would conserve water, but may cause clogs with older sanitary piping.
17	Lavatories are metered or low-flow/water saving	B		



PHYSICAL FACILITY ASSESSMENT  
RECOMMENDED ACTIONS COST SUMMARY

St. Raphael Parish											
Part 4.3 - School	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Subtotal
Building Functionality											\$0
Roof System											
Roofing System - Replace Low Slope Areas (Gym 10,800sf)									\$98,000		\$98,000
Roofing System - Replace Low Slope Areas (West 3,100sf)						\$20,000					\$20,000
Roof Flashings		\$2,000									\$2,000
Roofing System - Annual Inspection	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$2,500
Exterior Walls, Foundations and Structure											
General grading/fill low spots			\$1,000								\$1,000
Sealants/caulking		\$2,000				\$1,500				\$2,000	\$5,500
Landscape Planter Reconstruction				\$18,000							\$18,000
Masonry repairs/cavity wall work/tuckpointing		\$12,000								\$2,000	\$14,000
Bell tower repairs						\$10,000					\$10,000
Structure tee repairs		\$60,000									\$60,000
Exterior Windows											
Window replacement at original school			\$165,000								\$165,000
Gasket repairs/replacement	\$2,000										\$2,000
Exterior Doors and Frames											
Replace south door and frame			\$13,500								\$13,500
Interior Doors and Hardware											
Replace older door hardware							\$16,000				\$16,000
Interior Finishes											
General drywall repair/painting			\$2,500			\$3,000				\$5,000	\$10,500
Toilet Room Renovations						\$80,000					\$80,000
Mechanical, Electrical & Plumbing Systems											
Mechanical - Replace boilers					\$80,000						\$80,000
Mechanical - Inspect hot water piping						\$1,000					\$1,000
Mechanical - Replace classroom UVs/Add AC					\$220,000						\$220,000
Mechanical - Replace Rooftop Units 5&6, add dampers					\$75,000						\$75,000
Mechanical - Provide digital BAS controls					\$75,000						\$75,000
Mechanical - Add Return air grille at copy room	\$500										\$500
Mechanical - Remove abandoned lower level exhaust system					\$2,500						\$2,500
Mechanical - Provide Package rooftop unit				\$60,000							\$60,000
Mechanical - Permanent roof ladder, gas pipe supports		\$4,500									\$4,500
Electrical - Panel Thermal Imaging	\$5,000										\$5,000
Electrical - T8/LED Relamping	\$2,000	\$10,000	\$10,000								\$22,000
Plumbing - provide air gaps at kitchen and lower level sinks		\$10,000									\$10,000
Subtotal Construction Costs	\$9,750	\$100,750	\$192,250	\$78,250	\$452,750	\$115,750	\$16,250	\$250	\$98,250	\$9,250	\$1,073,500
Subtotal Soft Costs (Contingencies, Professional Fees, Staff Labor, etc.)	\$1,950	\$20,150	\$38,450	\$15,650	\$90,550	\$23,150	\$3,250	\$50	\$19,650	\$1,850	\$214,700
TOTAL PROJECT COSTS	\$11,700	\$120,900	\$230,700	\$93,900	\$543,300	\$138,900	\$19,500	\$300	\$117,900	\$11,100	\$1,288,200



## **Tab 1**

### **Site and Parking Facilities**

- 1.1 - Site and Parking Facilities Narrative
  - Site Functionality and Pedestrian Access
  - Parking Lots and Vehicular Access
  - Site Lighting
- 1.2 – Site and Parking Facilities Assessment Matrix
- 1.3 – Site and Parking Facilities Recommended Actions Cost Summary

## **Tab 2**

### **Worship Facility**

- 2.1 – Worship Facility Narrative
  - Building Functionality
  - Roofing Systems
  - Exterior Walls, Foundations and Structure
  - Exterior Windows
  - Exterior Doors and Frames
  - Interior Doors and Hardware
  - Interior Finishes
  - Mechanical, Electrical & Plumbing Systems
- 2.2 – Worship Facility Assessment Matrix
- 2.3 – Worship Facility Recommended Actions Cost Summary

## **Tab 3**

### **Parish Offices and Meeting Facilities**

- 3.1 – Parish Offices and Meeting Facilities Narrative
  - Building Functionality
  - Roofing Systems
  - Exterior Walls, Foundations and Structure
  - Exterior Windows
  - Exterior Doors and Frames
  - Interior Doors and Hardware
  - Interior Finishes
  - Mechanical, Electrical & Plumbing Systems
- 3.2 – Parish Offices and Meeting Facilities Assessment Matrix
- 3.3 – Parish Offices and Meeting Facilities Recommended Actions Cost Summary

## **Tab 4**

### **School**

- 4.1 – School Facilities Narrative
  - Building Functionality
  - Roofing Systems
  - Exterior Walls, Foundations and Structure
  - Exterior Windows
  - Exterior Doors and Frames
  - Interior Doors and Hardware
  - Interior Finishes
  - Mechanical, Electrical & Plumbing Systems
- 4.2 – School Facilities Assessment Matrix
- 4.3 – School Facilities Recommended Actions Cost Summary

## **Tab 5**

### **MEP Systems Recommendations, Priorities and Total Estimated Costs**

## Part 5.0 - Recommendations, Priorities and Estimated Costs

### Mechanical, Electrical and Plumbing Systems

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#### **Part 5.1 - Mechanical Recommendations**

##### **Site and Parking Facilities**

None.

##### **Worship Facility**

Since the Worship Space is rarely fully occupied, energy can be saved by only delivering outside air to the space when it is required. Add CO2 sensors to the space to control rooftop unit outside air dampers to provide outside air only when it is needed. Estimated cost: \$5,000

The condenser coils at all 8 of the rooftop units have hail damage and the fins should be combed. Estimated cost: \$1500

Underground ductwork is subject to penetration by groundwater. Clean underground ductwork and verify it is free of standing water. Estimated cost: \$5,000

Underground ductwork from Unit No. 1 and Unit No. 4 also serve perimeter and interior spaces adjacent to the Worship Space, but the thermostats for these units are in the Worship Space and the interior spaces have no control. If this is a problem, we recommend replacing the floor registers (4 total) with self-contained damper operated VAV floor registers that will prevent overheating or overcooling of the space. Estimated cost: \$12,000

The Chapel, Confessional, and Eucharist Chapel are all served by a single packaged rooftop unit with the thermostat located in the Chapel. The Chapel and the Confessional are perimeter spaces and the Eucharist Chapel is an interior space. It is likely that the Eucharist Chapel is being overheated in the winter and overcooled in the summer. If this is a problem, we recommend replacing the diffuser in the Eucharist Chapel with a self-contained damper operated VAV diffuser that will prevent overheating or overcooling of the space. Estimated cost: \$3,000

##### **Parish Offices and Meeting Facilities**

There are many different spaces in the first floor office areas – some are on the perimeter, some are on the interior, some have varied occupancy. In a perfect world, each of them would have their own temperature control. However, there are only 3 rooftop units serving the area and the averaging thermostats installed have not been sufficient to provide adequate temperature control. Rooftop Unit No. 1 was installed in 2012, but Rooftop Unit Nos. 2 and 3 are 14 years old and nearing the end of their useful life. Within the next 5 years, we recommend that the entire office area be evaluated for reconfiguring ductwork, providing additional rooftop units, and providing some duct systems with Variable Volume/Temperature smart damper control systems so more individual temperature control is provided throughout the area. The more work that is done, the more individual temperature control that will be provided.

Minimum work is to replace the 2 older rooftop units and make no other revisions. Estimated cost: \$25,000.

## Part 5.0 - Recommendations, Priorities and Estimated Costs

Maximum work is to provide 1 replacement rooftop unit, 5 new rooftop units, 20 Variable Volume/Temperature dampers, and miscellaneous duct modifications to provide all occupied spaces with their own thermostat. Estimated cost: \$200,000

Rooftop unit No. 4 serving the lower level Activity Center is 14 years old and nearing the end of its useful life. The unit should be replaced within 5 years. Estimated cost: \$30,000.

### **School**

Per the manufacturer, the AO Smith boilers installed in 2001 have a life expectancy of 15-20 years if properly maintained. We recommend that the boilers be replaced within the next 5 years. Estimated cost: \$80,000

The hot water piping in the building is 50 years old and has a life expectancy of 65 years. We recommend that the piping be inspected within 10 years to determine its condition. Estimated cost (inspection only): \$1,000

The Herman Nelson classroom heating only unit ventilators are well beyond their useful life and should be replaced (10 total). Estimated cost: \$120,000.

Window air conditioners are not recommended for air conditioning classrooms due to noise. Also, they don't provide the code required outside air ventilation. Therefore, we recommend that when the unit ventilators are replaced, they include a DX cooling coil and an associated air cooled condensing unit which would be mounted on the roof or grade. Estimated cost (additional amount above replacing the unit ventilator): \$100,000

Rooftop Units No. 5 & 6 are 14 years old and should be replaced in the next 5 years. Estimated cost: \$45,000.

Each of Rooftop Units No. 5 & 6 serve multiple spaces with a single thermostat. If additional temperature control is required, we recommend adding 5 Variable Volume/Temperature dampers to the No. 5 system and 4 dampers to the No. 6 system. Estimated cost: \$30,000

At the south side of the lower level, the addition of a wall to provide a separate Copy Room has left the Copy Room with no return air path. Provide a relief grille to the ceiling and a wall opening above the ceiling to the Teacher's Lounge. Estimated cost: \$500

The exhaust system previously serving the lower level appears to be abandoned. Remove the exhaust fan at the roof and block up all the intake louvers at the lower level. Estimated cost: \$4,000

The gymnasium appears to have no outside air ventilation provided to it. We recommend providing a packaged heating/cooling rooftop unit to serve the gymnasium. Estimated cost: \$60,000

The gas pipe on the roof is missing some supports. Provide additional supports as required to limit the distance between supports to 12 ft. for a 2.5" pipe and 14 ft. for a 3" pipe. Estimated cost: \$500

At the roof, the wooden ladder from the high roof to access the lower roof north of the Gymnasium is split and failing. Provide a permanent steel rung ladder. Estimated cost: \$4000

Provide a Building Automation System using Direct Digital Controls to serve the central hot water heating plant and all classroom unit ventilators. Estimated cost: \$75,000



## Part 5.0 - Recommendations, Priorities and Estimated Costs

### **Part 5.2 - Electrical Recommendations**

#### **Site and Parking Facilities**

Provide new LED light poles to light up the rear end of the parking lot. Estimated cost: \$35,000

Replace existing parking lot poles with LED. Estimated cost: Estimated cost: \$15,000

Replace existing wall packs on school building with LED. Estimated cost: \$7,500

#### **Worship Facility**

Thermal imaging for existing switchboard and panelboards. Estimated cost: \$2,000

Replace remaining fixture with T12 lamps. Estimated cost: \$1,500

Due to the dimensions and room finishes of the church auditorium, there have been complaints of the overall voice quality in the space. It is recommended to have a third party sound engineer to visit the site and provide options to improve the sound system. Further investigation is needed to determine the best solution.

#### **Parish Offices and Meeting Facilities**

No recommendations.

### **Part 4 - School**

Thermal imaging service is recommended at the switchboard and panels as a preventative measure to ensure all connections are secure and properly terminated. Estimated cost: \$5,000

Investigate and correct the occurrences of circuit breaker tripping for the window air conditioning unit. Estimated cost: \$2,500

Replace remaining fixture with T12 lamps. Estimated cost: \$500

### **Part 5.3 – Plumbing Recommendations**

#### **Site and Parking Facilities**

None.

#### **Worship Facility**

Provide an expansion tank on each electric hot water heater. (Four water heater locations)  
Estimated cost: \$750 per location.

Replace pump on baptismal font recirculation line with larger pump. Estimated cost: \$500.

## Part 5.0 - Recommendations, Priorities and Estimated Costs

### **Parish Offices and Meeting Facilities**

The lack of water to the plumbing fixtures at the Meeting Room seems odd since there is a 40 gallon water heater directly adjacent to the room. There are several options to fixing the hot water supply volume problem. The first is to replace the water heater with a larger unit. This option seems wasteful since the water heater is brand new. The second option is to look at water usage in the area and replace faucet aerators with lower flow aerators. This would reduce the flow of hot water to the fixtures. It is possible that the meeting room faucet could be flowing 2.5 to 3.5 gallons per minute. If the faucet flows at the 2.5 gallon per minute rate for 16 minutes during a cleanup, the water heater would be out of hot water. Further investigation is needed to determine the best solution.

### **School**

At the warming kitchen the double bowl prep sink should be disconnected from direct connection to sanitary waste system. An open site drain should be added in the floor of the room and the prep sink should be piped to the open site drain with an air gap. Floor cutting and opening the wall may be required to re-route piping and install an open site drain. Estimated cost: \$7,500.

Remove splitter and soap system from direct connection to faucet at service sink. Estimated cost: \$50.

Provide an expansion tank on electric hot water heater at Gymnasium kitchen. Estimated cost: \$750.

At the Activity Room Warming Kitchen an open site drain should be added in the floor of the room and the prep sink should be piped to the open site drain with an air gap. Floor cutting and opening the wall may be required to re-route piping and install an open site drain. Estimated cost: \$7,500.

## **Part 5.4 - Fire Protection Recommendations**

### **Site and Parking Facilities**

None.

### **Worship Facility**

None.

### **Parish Offices and Meeting Facilities**

None.

### **School**

None.

PHYSICAL FACILITY ASSESSMENT  
RECOMMENDED ACTIONS COST SUMMARY

St. Raphael Parish											
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Subtotal
Part 1 - Site and Parking Facilities	\$26,000	\$0	\$28,500	\$16,500	\$57,500	\$13,000	\$17,000	\$0	\$5,000	\$17,500	\$181,000
Part 2 - Worship Facility	\$33,750	\$179,750	\$33,750	\$750	\$250	\$2,250	\$60,250	\$250	\$250	\$6,750	\$318,000
Part 3 - Parish Offices and Meeting Facilities	\$15,000	\$5,750	\$6,250	\$250	\$270,250	\$4,750	\$250	\$150,250	\$250	\$9,250	\$462,250
Part 4 - School	\$9,750	\$100,750	\$192,250	\$78,250	\$452,750	\$115,750	\$16,250	\$250	\$98,250	\$9,250	\$1,073,500
Subtotal Construction Costs	\$84,500	\$286,250	\$260,750	\$95,750	\$780,750	\$135,750	\$93,750	\$150,750	\$103,750	\$42,750	\$2,034,750
Subtotal Soft Costs (Contingencies, Professional Fees, Staff Labor, etc.)	\$16,900	\$57,250	\$52,150	\$19,150	\$156,150	\$27,150	\$18,750	\$30,150	\$20,750	\$8,550	\$406,950
TOTAL PROJECT COSTS	\$101,400	\$343,500	\$312,900	\$114,900	\$936,900	\$162,900	\$112,500	\$180,900	\$124,500	\$51,300	\$2,441,700

