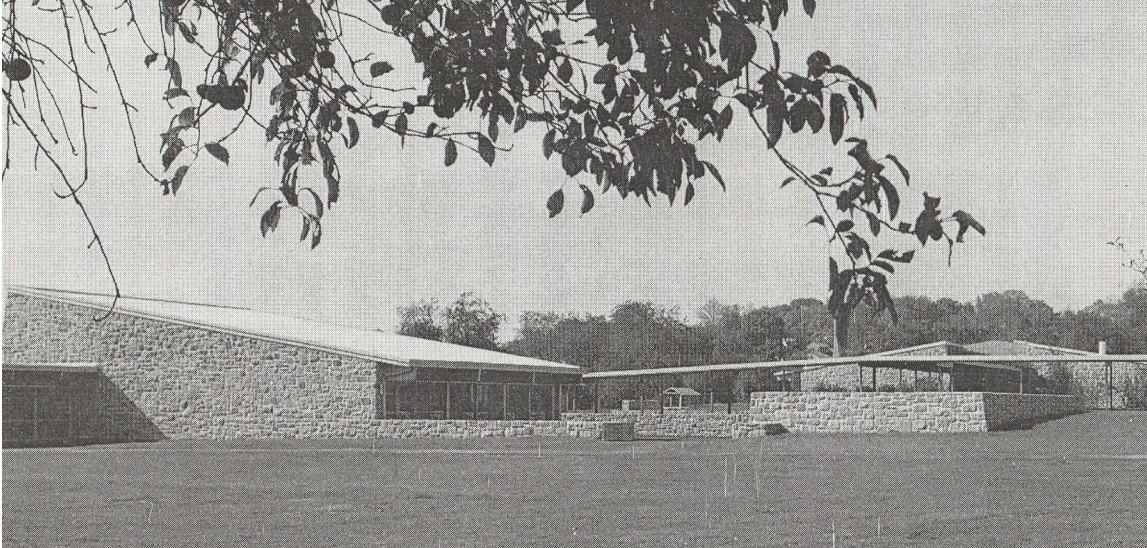


September 12, 2018

BRYN ATHYN CHURCH SCHOOL

Facilities Planning Report
Existing Building and Space Needs Analysis



SPACE Strategies, LLC
7713 Mill Road
Elkins Park, PA 19027

BRYN ATHYN CHURCH SCHOOL

Facilities Planning - Existing Building and Space Needs Analysis

INTRODUCTION

The Bryn Athyn Church School has been in existence for over 100 years and at this location since the original primary school was constructed in 1954. It was added onto six different times during the subsequent 37 years with the last significant building project being completed 27 years ago. Other than isolated repairs or replacements, little has been changed or altered since that time. There is concern that the physical building conditions have deteriorated such that significant repair work will need to be completed simply to sustain the building in its current configuration. In addition, there are concerns regarding the existing building layout and the quality of the spaces within the building. A committee of Society and School Administrators and volunteers has been formed to determine the best path forward in the hopes of renovating, adding to, or even rebuilding the existing school.

Hired as an Owner's Representative by the Bryn Athyn Church School in March of this year, my purpose is to assist the school as it begins the process of addressing the challenges associated with an aging facility and a sustained student body. I began my career attending the Roger Williams University School of Architecture in Rhode Island. In 1996, I moved to Philadelphia where I have continued learning and crafting my talents as an architect for over 20 years, primarily working on educational and religious buildings. During that time, I discovered that while I appreciate inspiring design, my passion is studying how people actually use buildings. I have come to believe that while a successful building project is often attributed to quality design and construction, its true greatness is measured by how well it meets the needs and desires of the inhabitants. While my design sensibilities, problem solving skills and technical abilities have certainly been honed through an architectural education and career, I am no longer practicing as an architect. I will not be competing for any future design work at BACS and have no vested interest in the outcome of any recommendation beyond making sure that it meets your goals and expectations.

Many will remember past planning efforts to rebuild BACS. As I understand, previous attempts generally grew out of other larger studies and outside influences that, while important at the time, may have been too broad in scope to address the specific needs of the existing school facility. Past planning primarily resulted in designs for a new building on either the current site or a new location without much consideration of the physical and emotional value contained within the walls of the existing building. This time, we have started by first establishing the condition of what we have, what work would be required to extend the life of the existing, and how well it suits student needs. This report is a summary of those activities. After establishing these facts, we will consider whether the existing building can meet future needs or what can be done to improve the conditions while retaining as much existing value as possible. We recognize that if necessary improvements prove to be so extensive that it makes practical sense to demolish and rebuild, then that will not be ignored, but that is not our starting premise. Most important to remember is that this process is intended to provide an understanding of the existing facility, programmatic needs, and recommendations for what should be done to provide a school that educates and inspires the youngest students while also remaining fiscally responsible to the larger Church and Community.

Respectfully,



Amie Leighton, AIA LEED AP
Space Strategies, LLC

BRYN ATHYN CHURCH SCHOOL

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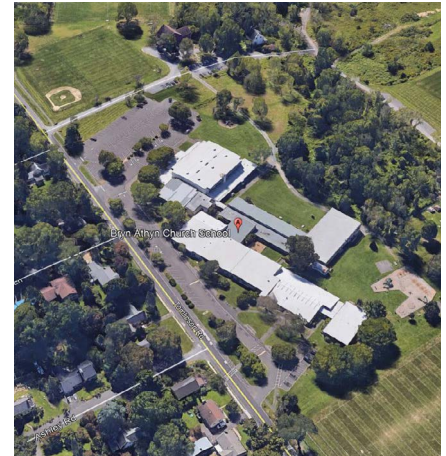
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PART 1 - EXISTING FACILITY - DESCRIPTION AND HISTORY

SITE

The existing site is approximately 25 acres located along Tomlinson Road in Bryn Athyn Borough. The site is owned by the New Church and adjoins existing New Church Athletic Facilities to the West and South. It features a bus loop with single sided parking along the north side and a large parking lot serving as both faculty parking and parent drop off and pick up at the east end of the building. The parking lot also functions for large gatherings of the Society Building. The site is complicated by a bisecting road leading to the Bryn Athyn Thrift Shop (BATS) and Orchard Art Works, creating a safety concern for students accessing the school athletic fields on the opposite side of the road. The site also contains a significant area of wetlands, which is home to a Nature Center.



CONSTRUCTION IN MANY PHASES

The original **Primary Building** was designed by Vincent G. Kling, AIA and constructed in 1954. The Primary Building has served grades kindergarten thru third grade. Currently 3rd grade is located near the Pastor's Office, and the Preschool occupies the previous 3rd grade rooms. When constructed, the Primary Building was approximately 8,800 sq. ft. The building is set on masonry piers and slab on grade construction with a crawl space. The composite super structure is defined by heavy timber framing and mass masonry walls. End walls are constructed of field stone. Steep sloped roofs are supported on exposed laminated wood rafters and overhang the majority of building walls.



The **Intermediate Building** was also designed by Vincent G. Kling, AIA and was constructed in 1958 as a separate building. The Intermediate Building section has and continues to serve fourth grade thru the sixth grade and also includes the music room. The Intermediate Building is approximately 13,000 sf. The building was constructed very similar to the original building. The building is set on masonry piers and slab on grade construction with a crawl space. The composite super structure is defined by heavy timber framing and mass masonry walls. End walls are constructed of field stone. Steep sloped roofs are supported on exposed laminated wood rafters and overhang the majority of building walls. Many of the exterior elements have been covered up by additions or been replaced or covered by aluminum or vinyl materials.



The **Society Building**, designed by Stewart Nobel, Class & Partners Architects, was constructed in 1965 (1970 per Intertek). The Society Building consists of the gymnasium, a meeting /auditorium room, commercial kitchen and locker rooms. The Society Building is approximately 28,000 sq. ft. The construction of this addition appears to use similar language to the Primary and Intermediate Buildings. The addition is set on a continuous masonry footing and slab on grade construction at the interior. The composite super structure is composed of heavy timber framing at roofs and mass masonry at walls with some intermittent structural steel and steel strapping and anchors at various heavy timber connections. Exterior walls are painted reinforced CMU with pilasters for supporting the high roofs of exposed laminated wood beams.



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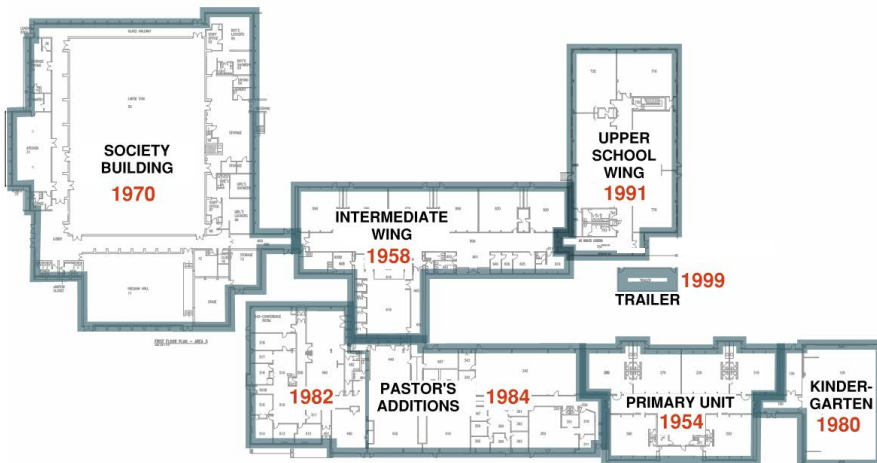
A **kindergarten addition** of 5,000 sf by The Klett Organization Architects was constructed in 1980 at the far western end of the building. It is considered part of the primary wing – although it’s construction and condition are vastly different and more akin to the Pastor’s Additions, noted below. This addition is set on a continuous masonry footing with slab on grade construction. The super structure is steel, and the exterior walls are formed with metal framing and clad with “Steelox” insulated steel wall panels and natural field stone side walls. The wall panels, windows and doors require significant repair or replacement.

The **Pastor’s Additions** were constructed in two phases between 1982 and 1984 both by the Klett Organization Architects and in very similar construction to the kindergarten addition, except concrete block detailing at the exterior replaces natural stone. Both areas have metal exterior wall paneling that has deteriorated and will require a new wall system. The Pastor’s Office addition serves the pastors office along with providing space for the art room, science room, library, and third grade classrooms. This area of the building is approximately 20,000 sq. ft.

The **Upper School** was the last addition and was constructed in 1991. The Architect of Record was also the Klett Organization Architects. This prefabricated steel building addition is constructed on a continuous footing with slab on grade interior. The structure is a prefabricated steel frame with exterior walls of metal framing, rigid insulation, fiberglass insulation, and metal wall panels. The Upper School serves seventh grade, eighth grade and the computer room. The Upper School is approximately 13,800 sq. ft.

A **trailer** was added to the site in 1999 to provide “temporary” additional space required to accommodate an unusually large grade level. It is approximately 600 sf. Although no longer needed for grade level instruction, it is currently used for Enrichment.

The building footprint is 82,644 square feet, with a total building area of 89,188 square feet, including basement areas and the music mezzanine.



PART 2 - EXISTING FACILITY - CONDITION ASSESSMENT

BACKGROUND

The building construction ranges from 27 to 60 years old with the physical conditions varying based on age, construction type, solar orientation and exposure to other environmental conditions. Over the years, maintenance at BACS can generally be described as mostly reactive in nature. Building projects were taken on by breaches, failures or other needs required to maintain the building in sound condition, but there was no intentional plan to preserve the buildings to like original condition. This approach, while not uncommon, has resulted in a building which has been described by users as old, tired, and uninspired. It has also meant that while the systems have been kept in functional condition, they may be reaching the end of their useful life. Even with the best care, there comes a time when components simply wear out, systems cannot be repaired any longer because parts are obsolete, or they reach the tipping point where repair is not fiscally responsible.

PROCESS

With concern that BACS is approaching the need for significant investment in repairing or replacing various systems throughout the building, a series of studies were commissioned by administrators to study, evaluate and recommend improvements necessary in the immediate, short and longer terms. The following professional studies have been reviewed and are summarized below. The complete reports are available in the New Church Office. Please contact Stewart Asplundh, if you would like to review any of the following:

- Mechanical, Plumbing, Electrical, and Life Safety Systems – McHugh Engineering Assoc, Inc., August, 2016
- Roof Condition – Levine & Company, Inc., December, 2017
- Façade – Intertek-ATI, April, 2018

MECHANICAL SYSTEM

Heating in the building is generally achieved by a series of hot water boilers. Hot water is either distributed to radiant slabs, baseboard heaters, or split system units depending on location within in the buildings. The boilers vary in age but were noted to be of newer construction and in good condition. However, the terminal heating elements are generally at the extent of or past their useful life expectancy. Cooling is provided through a combination of ducted and ductless split system units and also window air conditioners. They are also generally at the end of their expected service life.

Conditions and Recommendations -

Boilers – all of newer construction and appear in good condition.

Radiant Floors – The primary and intermediate buildings have radiant floors throughout. There are no known issues, BUT, conditions are hidden below floors. Based on experience, it is McHugh Engineering’s position that radiant floors are past their useful life and they recommend finding an alternative solution.

Baseboard Heat – Individual units were not inspected but reports of overheating indicate failing control valves. McHugh expects that a majority of the control valves are problematic. In addition to failing, these control valves are pneumatic, and therefore are also becoming obsolete. McHugh recommends replacing all the control valves, cleaning the baseboard units and removing obstructions. It should be considered whether complete replacement of baseboard units is more practical than extensive servicing of the existing units.



Society Bldg Boilers

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Split Systems - With the exception of the library, faculty lounge and science room split systems, all other air handlers are 25-27 years old and exceed ASHRAE's expected service life. While no major issues were reported, failures are to be expected and either costly emergency repairs or replacement will be necessary in the near future. Refrigerant lines will also need to be upgraded with this equipment due to the older type of refrigerant being obsolete.

Heilman Rooftop Units – These packaged units are similar to the split systems in that although there are no known issues with these units, they are believed to be approximately 30 years old and will require replacement in the near future.

The exterior rooftop ductwork is in poor condition and requires replacement.

Kitchen Make-Up Air Unit – The report indicates this rooftop unit is not functional. The purpose is to provide make-up air to the space when the kitchen hoods are running otherwise the kitchen becomes pressurized. The hoods are reportedly often left running, which is a problem. Fortunately, it does have a temperature switch, so the impact has been minimal. Since this make-up air is a code requirement, any renovation of the equipment or space will require replacing this unit.

Music Room Air Handler – This heating only unit is past its useful life and the two window air conditioners are ineffective for the size of the space.

Window Air Conditioners – Although easy to replace on an as needed basis, these window units are generally at the end of their service life. It is well known that window units have the unfortunate side effects of blocking daylight and creating unwanted and disruptive noise in educational spaces. Teachers reported having to make judgement calls regarding the importance of physical comfort over being heard in the classrooms.

Exhaust Fans – There are four large exhaust fans on the gym roof that work in conjunction with the make-up air units for this space. They are either original to the building or were replaced with the roofing, which would make them 20+ years old. The heat only make-up air units were recently replaced, but the controls tying them to the exhaust fans do not appear to have been fully addressed at that time. It was recommended that other miscellaneous building exhaust fans could be easily replaced as necessary.

Ventilation – Natural ventilation was a design feature of the original Primary Building and Intermediate Building, but broken window operators and subsequent construction has limited its effectiveness. Where possible window operation should be restored, if the windows are not replaced entirely with new operable windows of equivalent area. Other areas of the building likely met the code at the time of construction, but may not be code compliant now or in line with best practices. This is something that should be considered carefully with any major renovation project.

The report notes that McHugh's survey was completed visually, so ceilings and walls prevented certain elements like piping and ductwork from being addressed in the report. In these cases judgements and recommendations are based on best practice and may not fully address specific problems uncovered at a later date. They also note that individual equipment and stems were not inspected but addressed based solely on functionality.



Society Bldg Damaged Ductwork



Society Bldg Make-Up-Air Unit

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ELECTRICAL SYSTEM-

Power to BACS comes from the Secondary School. The 4160V service enters the basement of the Society Building where a 225 kVA substation steps down the power for distribution throughout the building. Power is distributed at 208V. There is a main circuit breaker at 800 amps and distribution breakers at 90 amps to 225 amps. Labeling indicates that the substation was last cleaned in 1998 (20 years ago). This should be done at least every 5 years. There is also a capacitor bank which appears to be original, but the power factor correction capacitor is shut off. It is unclear at this time if this is necessary. If not, then it should be removed and disposed of properly.

This report indicates that original panelboards and branch circuit wiring is still being used, and at 50-60 years old they have reached the end of their useful service life. Newer panels have been added over time to supplement original construction as more and more technology has been implemented throughout the building. While it is noted that the newer additional wiring is code compliant, much of it is exposed in the rooms and not very attractive. The most notable safety concern reported is the lack of ground fault protected (GFI) devices when located within 6' of classroom sinks and the kitchen. Lighting is inconsistent throughout the building and even within classrooms. Many light fixtures have different lamps even within the same fixtures as evidenced by the different colors. Inconsistencies between fixtures and lamps can decrease efficiency and should be optimized. The report suggested that consideration be given to changing the existing fluorescent lighting to more efficient LEDs with occupancy and possibly daylight sensors.

Conditions and Recommendations -

Substation – Preventive maintenance and cleaning with replacement within 5-10 years.

Panelboards – All equipment more than 40 years old should be replaced. This includes all but the panelboards installed in the Upper Unit or added since the 1990s to supplement existing classrooms.

Feeder cables, branch circuit wiring - All equipment more than 40 years old should be replaced. This includes all but the panelboards installed in the Upper Unit or added since the 1990s to supplement existing classrooms.

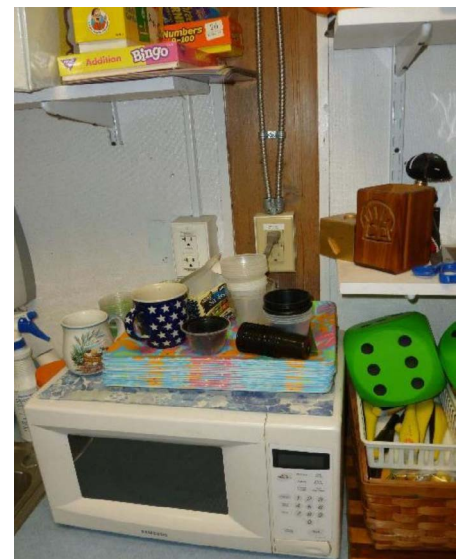
Devices - All equipment more than 40 years old should be replaced. This includes all but the Upper Unit or added since the 1990s to supplement existing classrooms.

Lighting – Replace with more efficient LED fixtures and a control system to increase efficiency.

Power Factor Correction – Replace or dispose of properly



Primary Bldg Splice Box



Exposed MC Cable to New Outlets

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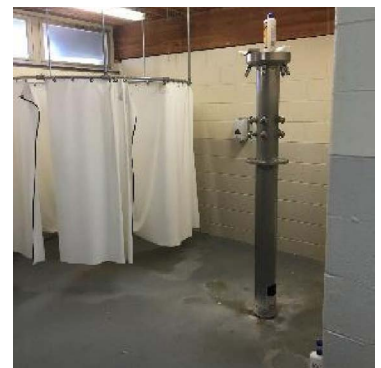
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PLUMBING SYSTEM-

Existing plumbing systems include a sanitary drainage, storm water drainage, domestic cold and hot water, natural gas, and plumbing fixtures. Sanitary drainage piping is cast iron and includes 8 underground mains exiting the building (4 - Society, 2 - Intermediate, 1 - Upper, 1 - Primary/Pastor's Office). The Society Building kitchen does not have a grease interceptor, which is required by code. Presently, the main from the kitchen needs to be cleaned twice per year as a result of grease accumulation. The storm system works with drainage from roofs to gutters to downspouts that are connected underground along the outside of the building to two cast iron underground storm water mains. The mains drain to two storm water wells at the south end of the site. The domestic cold water system was modified in 1984. Presently, the main service enters into a closet in the faculty lounge and a backflow preventer has been added. Distribution piping is copper with solder joints and runs from the closet through the building to various locations. It is to be noted that there are existing underground mains that originate in front of the Primary building, run to the Intermediate Building, and continue on to the Society Building. They have been abandoned in place. The domestic hot water system includes 5 hot water heaters. The Society Building has a hot water boiler and 1,050-gallon storage tank, this is original to the building in 1965 and supplies the Society Building locker rooms, toilet rooms, and kitchen as well as the Intermediate Building and Pastor's Office. Additionally, there are 4 smaller (20 to 50 gallon) water heaters that serve the Primary Building teacher's lounge, toilet rooms and sinks, laboratory classroom, and upper building. Natural gas is supplied through 2 underground medium pressure mains from the municipal main in Tomlinson Road. A 2 1/2" main serves the Society Building and the Upper Building. There is a meter and regulating station on the wall of the Society Building that reduces the pressure to low within the building. This service provides gas to boilers, domestic water heater, kitchen and HVAC units, and the generator. A second main enters the Primary Building's basement and supplies the Primary Building's boilers and domestic water heater. Plumbing fixtures are generally in good condition but are between 26-63 years old. They do not meet the new water usage guidelines and should be considered for replacement with a future renovation project.



Society Bldg Hot Water Tank



Locker Room Showers

Conditions and Recommendations -

Sanitary drainage – no present issues in existing piping. Recommend adding grease interceptor for the Society Building Kitchen main or at a minimum an individual grease trap on the three-pot sink.

Storm drainage – no present issues in existing piping, except for repairing or replacing misc. damaged downspouts.

Domestic Cold Water - no present issues in existing piping, except for some misc. insulation missing from piping that should be replaced.

Domestic Hot Water – The large hot water heater/tank in the Society Building Basement is over 50 years old. It has far exceeded its 20-year expected service life and should be replaced before failure. A multi-tank high efficiency gas fired system was recommended as an alternative for efficiency and ease of maintenance. It is also to be noted that locker room showers are not typically used by students any longer, so capacity is less than originally required. McHugh also recommended replacing system gate valves throughout that do not close completely with new ball valves.

Natural Gas – McHugh notes that the emergency generator should be independently fed from the service regulating station, and not from the main to the boiler room as it currently is. They recommend refeeding the generator as such.

Plumbing Fixtures – Consider replacement with new water efficient fixtures in any future renovation project.

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LIFE SAFETY SYSTEMS - EMERGENCY LIGHTING AND FIRE ALARM -

Emergency lighting is provided by a combination of batteries and a generator. A 36kW generator was replaced approximately 4-5 years ago. It is sized for the Society Building emergency lighting use plus all of the heating and pumps, phone and server room. McHugh recommends converting all the lighting to the generator so that only one system needs to be maintained, but it is unclear if the generator has this capacity. The existing fire alarm system is approximately 10 years old and extends throughout the building. It is code compliant and can be expected to last another 10-15 years.

Conditions and Recommendations -

Emergency lighting – Replace battery operated emergency lighting with fixtures operated by the generator, if possible.

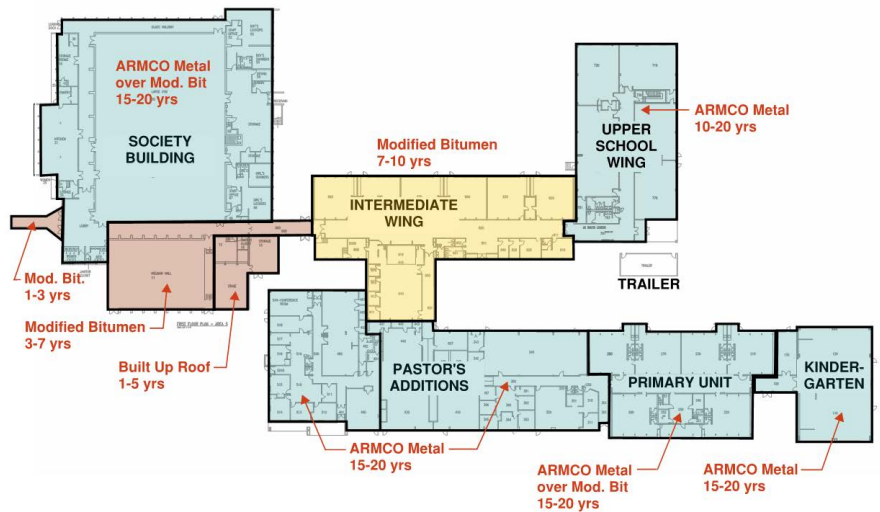
Fire Alarm – System is serviceable for approximately 10-15 years longer.

ROOFING -

Existing roofing varies around the building including, ARMCO Metal Panel System, modified bitumen roof systems, and built-up roofing. According to the study, overall the roofs of the school are in relatively good condition for their age. The gutters and especially the downspouts are not quite as well preserved. The study contains the chart below and also prioritizes repairs and replacements in terms of levels with corresponding cost estimates. Level 1 recommendations include repairs at active leak locations and those requiring attention as soon as possible. Level 2 recommendations are those which should be carried out within 2 to 5 years in order to prevent more serious problems from occurring. Level 3 recommendations are for roofs with more than 5 years of service life remaining and involve either replacement or, in the case of the metal roofs, regular monitoring followed by coating.

Conditions and Recommendations -

ARMCO metal roof systems - Areas of the building with this system include the Kindergarten, Primary Building, Library/Teacher's Lounge, Classroom Addition, Upper Unit, and portions of the Society Building and have the longest life left (approx. 15-20 years). This is good news; however, the report does caution that a when these roof do need repair, the work will require a structural engineer, since the metal system spans between structure and the entire walls and roof were designed as a single system. Modifications could require either a complete tear off of the existing panels (exposing the interior) or additional structural reinforcing.



Note: ARMCO Roofs will need Gutters and Downspouts in 5-10 yrs.

Existing Modified Bitumen Roof Systems at the Intermediate Building, Heilman hall, and corridor between Heilman Hall and the Gymnasium are in fair condition. There is evidence of crazing, granule loss, deep scuffs, significant ponding and some penetrations thru flashing that indicate a lifespan of approx. 5-10 years.

Built-Up Roofing Systems at the Stage Addition is in poor condition. Patching in several locations as well as sponginess of the underlayment indicates ongoing problems. Replacement should be undertaken within 1-5 years.

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Roof Area	Year of Original Construction	Original Roof Type	Existing Roof Type (if different from original)	Year of Existing roof Installation (if different from original)	Expected Remaining Service Life
Kindergarten	1980	ARMCO Standing Seam (16" wide pans)			Roof = 15 to 20 years* Gutter = 5 to 10 years
Primary Building	1954	Built-Up Roofing	ARMCO standing seam (16" wide pans)	c.1980	Roof = 15 to 20 years* Gutters = 5 to 10 years
Library/Teachers' Lounge (Phase 2)	1984	ARMCO Standing Seam (16" wide pans)			Roof = 15 to 20 years* Gutter = 5 to 10 years
Classroom Addition (Phase 1)	1982	ARMCO Standing Seam (16" wide pans)			Roof = 15 to 20 years* Gutters = 5 to 10 years
Intermediate Building	1958	Built-Up Roofing	Modified Bitumen	unknown	7 to 10 years
Upper Unit/7 th and 8 th Grade Wing	1990	ARMCO Standing Seam (24" wide pans)			Roof = 10 to 20 years* Gutter = 5 to 10 years
Stage Addition (Phase 1)	1982	Built-Up Roofing			1 to 5 years
All Purpose Building (Heilman Auditorium and North Corridor)	1969	Built-Up Roofing	Modified Bitumen	unknown	3 to 7 years
All Purpose Building (Gym, Locker Rooms, South Corridor, East Lobby and Kitchen)	1969	Built-Up Roofing	ARMCO standing seam (16" wide pans)	c.1980	Roof = 15 to 20 years* Gutters = 5 to 10 years
East Covered Walkway	1969	Unknown	Modified Bitumen	unknown	1 to 3 years

* prior to application of recommended coating

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BUILDING FACADES-

The façade study completed by Intertek-ATI describes existing conditions relating to the exterior windows, doors, and walls. The report distinguishes between the architecture of buildings built prior to 1975 and those constructed after. The former being the Primary Building, Intermediate Building, and the Society Building, which have similar construction types and are considered to have a higher architectural and historic value. Although newer, the remaining buildings are noted to generally be in worse condition with less value. The report includes the following recommended categories: regular maintenance, existing deferred maintenance, replacements, and capital projects.

Regular Maintenance - Painting and pointing are examples of regular maintenance that have been successful programs at BACS which have helped maintain the facility in fair to good condition.

Existing Deferred Maintenance – Other regular preventative work that would typically fall under regular maintenance is not always completed for one reason or another. This becomes deferred maintenance. This report indicates that at BACS, there have been several items that fall into this category including addressing some leaks through exterior walls, and replacing sealant in expansion joints and where materials transition. Breaches in the exterior walls that allow water intrusion tend to degrade faster than without the leaks, compounding the problems.

Replacements - The one commodity all these buildings have in common is the condition of the fenestration (windows and doors). Intertek notes that all windows and doors appear to have surpassed their useful lives and should be replaced. The most acute of the conditions are at the newer buildings that do not have deep overhangs. As part of the window and door replacements, the plate glass windows at the Society Building also need to be replaced and should be moved up near the top of the importance list. Their size and proximity to the floor represent a safety concern, and the single pane construction is very inefficient.

High Priority Capital – There are three suggested improvements in the exterior wall systems which have also been identified in the report. The first includes removing and replacing the 1950's cement asbestos siding. The material is in sound condition and there is nothing currently wrong with the asbestos siding, except for the fact that it is asbestos and is a hazardous material if it does become friable in the future. The second is that they recommend designing and implementing a solution for treating and protecting the cut ends of the exposed wood rafters. Conditions vary around the building, but a singular solution should be determined and corrected at the Primary, Intermediate, and Society Buildings. Thirdly, the metal cladding at the post 1980's buildings is in poor condition. This is especially true at the kindergarten Addition, which is the recommended test case for a recladding system that could be used at the other phases with similar construction.



Sealant at Material Transitions



Primary Building Window Detail



Society Bldg Door and Frame



Metal Wall Panels at Grade

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INTERIOR FIXTURES AND FINISHES

A specific study was not completed to assess the general interior conditions of architectural elements, but impressions from my site visits are included in this report to complete a picture of the existing facilities.

Interior Components and Finishes

- Flooring – this a combination of hard surfaces and carpeted areas. Classrooms and most corridors are in good condition and have VCT that was installed approx. 8-12 years ago. The kindergarten classrooms, upper unit computer room, library, some of the music room, and the pastor’s office is still carpeted. In the Society Building, the Heilman Hall corridor/lobby are carpeted, the remaining corridors are painted concrete. The kitchen and locker rooms appear to be an epoxy like finish, and both Heilman Hall and the Gym have wood floors. The gym floor is was recently refinished, but the Heilman Hall floor requires at least a heavy sanding and completely new finish. All carpet and at least most of the VCT will need to be replaced as part of a significant renovations, especially if walls or cabinetry are modified.
- Ceilings – Generally most/all appear to be original to the building. Acoustic ceiling products while still functional, tend to get stained, sag and get damaged over time, and often replacement tiles do not match creating a hap-hazard look. It should be assumed that any major overhaul of mechanical and electrical systems would require removal and replacement of all ceilings as part of that work.
- Walls – Generally original to construction of spaces. Existing corridor/classroom walls in the primary and intermediate units have a lot of glass. While this does create a nice open feel to the school, it does create some distraction issues as well as safety concerns. Some of the panes of glass at the reading lofts have been replaced with laminated safety glass or wood rails have been added. However, a consistent overall approach should be considered.
- Cabinetry – This is generally all original to the buildings, other than where storage in classrooms has been modified over time. In most locations, the casework has exceeded its useful life and is in poor condition. It should be replaced as spaces are renovated or in its entirety as part of a significant renovation.
- Doors – Overall, the doors and hardware appear to be original to their construction. Doors have not been inventoried, but original building drawings from the original and primary buildings indicate that most doors are 2’-8” wide, which does not meet current accessibility standards. Others may be similarly sized. Depending on the scope of renovations, if doorways are not altered, some of the sub-standard sizes could be grandfathered by code officials, but primary use rooms would need to be made accessible as part of any renovation and would require replacement of the doors and frames. Exterior doors required for accessible entry or egress would need to meet current standards. In addition, most all of the door operating hardware is the knob type and does not meet current accessibility standards. It is also noted that classroom doors currently cannot be locked from inside



Society Bldg Corridor



Cabinetry - classroom lofts



Cabinetry - classroom kitchens

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the room if there were an active shooter or other intruder scenario. Secondary devices have been implemented to varying degrees of success. At a minimum door latching hardware would need to be replaced. For the safety and continued beneficial use of the building, it should also be assumed that at least half of the doors and almost as many frames should be replaced due to wear and size/configuration issues, along with 90%-100% of the latching hardware. There is also an identified interest in adding card access hardware to many locations in addition to some possible electronic monitoring/control for all exterior doors.

- Toilet rooms – Generally toilet rooms are original to the building construction and do not meet the size and configurations required by Federal American Disabilities Act (ADA) guidelines. In addition to that, the plumbing fixtures, accessories, partitions, and finishes are in generally in fair to poor condition and should be replaced. Depending on the scope of the proposed renovations, existing toilet rooms would need to be reconfigured and/or additional small single user restrooms provided for those with disabilities. In the primary grade classrooms with separate boy and girl toilet rooms, this would likely mean reconfiguring to provide a single larger unisex room. Larger “gang” toilet rooms would require significant reconfiguration to meet ADA requirements and this typically requires larger floor space or results in a reduced capacity. Depending on the scope of renovations, code officials may accept the addition of accessible single user toilet rooms in lieu of reconfiguration. Regardless, the toilet rooms will require substantial renovations at all locations. The locker room facilities are in similar condition and will also require significant renovation.



Metal Wall Panels at Grade

Complete building code and ADA Accessibility studies have not been completed to date. It is expected that while all the building additions met the codes in place at the time of construction, they likely do not meet all current requirements. In most cases, upgrades to current standards are not required except when elements are renovated or replaced. The extent of future renovation will dictate the requirements to comply with current codes. It is to be expected that except for the most minimal of repair work, the building will be required to at least meet the minimum current standards for accessibility and life safety elements. A major renovation or additions will require complete compliance with the codes for new construction.

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SUMMARY OF COST ESTIMATES FROM INFRASTRUCTURE ASSESSMENTS

The following cost estimates are culled from the individual studies summarized above. Additional details are to be found in the individual reports.

Façade		\$ 835,000
Windows and Doors around school buildings	\$ 650,000	
Windows at All Purpose Building	\$ 125,000	
Existing deferred maintenance at campus buildings	\$ 60,000	
Roof		\$ 1,319,800
Level 1 (Almost complete)	\$ -	
Level 2 Estimated Cost	\$ 231,815	
Level 3 Estimated Cost	\$ 1,087,985	
Mechanical		\$ 1,140,000
0-10 Years	\$ 1,028,000	
10+ Years	\$ 112,000	
Electrical		\$ 1,082,500
0-10 Years	\$ 1,045,000	
10+ Years	\$ 37,500	
Plumbing		\$ 1,100,000
0-10 Years	\$ 1,094,400	
10+ Years	\$ 5,600	
Interior Finishes		\$ 1,535,000
New ceilings throughout	\$ 350,000	
Renovated toilet rooms	\$ 350,000	
Interior doors - hardware only	\$ 60,000	
Casework and tack/marker boards	\$ 400,000	
Flooring throughout (except gym)	\$ 125,000	
Window shades	\$ 75,000	
Painting / patching	\$ 175,000	
Total		\$ 7,012,300

Engr. estimates include cost ranges. These costs are the low end of range, but do include a 40% factor for incidentals, general conditions, work required by others.

MEP estimates do not include any general construction work, like removal of clgs or patching, and do not appear to include general conditions, design, or other fees.

Engineer only provided unit costs (not totals). Value is my architect's estimate from past project of similar size and scope, adjusted for size variation and inflation.

Items noted are scope that would surely be made necessary by work of other trades or for primary interior components with modest other upgrades. Costs are rough estimates based on experience and SF of school not actual material counts. Total does not include general conditions, fees, or a complete scope of work.

PART 3 - SPACE NEEDS

PROCESS

Groups of volunteers with similar relationships to the school were assembled for 30-60 minute discussions led by Amie Leighton. The topics varied slightly based on the experiences of each group, but an effort was made to discuss the same overall themes with each to get a sense of perspective and identify common threads. Eight groups of adults were enlisted with the following associations: Primary Unit Teachers, Intermediate Unit Teachers, Upper Unit Teachers, Specialist Teachers, Administration Members, Parents, Pastors and Society Users, and the General Community. We also solicited input from the Upper Unit students through a Google Poll.

COMMON PERCEPTIONS

The adult groups had different daily experiences in the buildings and each had a unique perspective to offer. Detailed notes from each of these meetings are provided in the appendix of this report and are a good source of individual thoughts and concerns, However, the goal of this project is to plan for the overall future of BACS, so it is the commonalities - likes, dislikes, and senses of value, between the groups that are most important at this time and highlighted below. Overall, I was surprised by the repetition of comments between groups and found there to be a surprising consensus on many issues. These highlights should be primary considerations in any plan for the future of the Bryn Athyn Church School.

Words that describe the existing building –

“Maze”, “Cobbled”, “Dated”, “Spread Out”, “Warehouse”, “Hot”, “Old”, “Confusing”, “Compartmentalized”, “Poorly laid out”, “Sprawling”, “Piecemeal”, “Not Pretty”, “Attractive – some parts including the stone”, “Neighborhood location”, “Welcoming”, “Inviting”. “Unimaginative”, “Quirky”, “Nice”, “Blessing”, “Warm-hearted”, “Happy”, “Thoughtful”, “Caring”, “Beautiful stone and wood”, “Clean”

Most Appreciate – many qualities mentioned, but the following were almost unanimously listed without prompt

- Daylight and views to outside, especially from classrooms
- There is a real love for the natural wood and stone
- Exterior Doors from all the classrooms
- Units are separated from each other

Would Change or Wish For –

- More storage
- Classrooms closer to drop off and pickup location
- Units not transitioning past other rooms so much
- Improved main entrance layout

Layout of the building –

- Classes making transitions are disruptive when passing other classes
- Travel distances are too far, especially for kindergarten kids who must travel the farthest for pickup and dismissal and computer lab
- Like separation of the units
- No clear school entrance with pickup and dismissal at a second location

Security –

- Needs to be better separation and access control between Society Building and the School
- Increased use of keycards so doors can be kept locked
- Some isolated fencing around play areas might be helpful

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Storage –

- In classroom storage generally thought was pretty good
- Society Building needs lots of storage and generally everyone mentioned additional storage needs

Music and Performance Spaces –

- Music spaces should be separated from the rest of educational spaces for acoustic reasons
- After school music lessons create an access and security issue
- Music should be located closer to the performance space
- Performance space could use more backstage storage

Classrooms –

- Generally, classrooms sizes ok. but more space for worship mentioned by several
- Biggest needs were more electric, better control of heating, and quieter A/C (in rooms with window units). These comments were typical of all classrooms in all the unit clusters.
- Love rooms with lots of daylight, with comments that better window shades are needed

Play Spaces –

- Need improved spaces for 3rd grade through 6th
- Like the athletic fields but hate where they are with the road between the school and the fields

Site –

- Arrival and dismissal layout is not good – a single arrival point close to the main office would be better
- Road bisecting the property used mainly by people going to BATS (thrift shop) is dangerous with kids going to fields
- Noted wetlands will be an obstacle
- Play areas are well used and more would be better

Lunch –

- Everyone seemed to like that lunch happens in the classrooms
- Need to renovate kitchen areas in the classrooms for this

Society Building –

- Public access an issue
- Storage is the biggest problem
- Heilman Hall is just slightly small for combined worship. Bleachers are a problem for both socializing and storage when not in use, but this is most compact way to provide seating capacity.

Preschool –

- Most like that it is part of the school, but would like it to be more separated – possibly with its own entrance
- Most see benefits for recruiting and also appreciate that the kids have a sense of familiarity when starting kindergarten

After School Care –

Note: this was not discussed in any groups other than the Administration group. However, it is included here anyway since that group noted that it has been discussed for years but they could never get around the space issue. It should be included in space considerations for the future.

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STUDENT INPUT

Interestingly, students had many of the same or similar comments as listed above. As the students have a unique perspective I think that it is noteworthy to consider their commonalities as well and separate from the adult influencers. The following are the questions asked of the students and some of the most common responses.

What do you love about the school building?

- Unit separation
- Natural Light and Windows
- Gym and specifically, the new gym floors

What do you think could be improved?

- Bathrooms and locker rooms
- Enrichment – not in trailers
- Basement spaces (in upper unit)
- Heating/AC

Do you have any concerns about the school building?

- Safety
- Cleaning
- Heat/AC

*Of note: 11 of 46 respondents (46%) indicated they had no concerns or did not answer this question.

Is there any one thing that you would NOT want changed about the school building?

- Layout of the Building
- Lofts for the younger grades

SPIRITUAL CONSIDERATIONS

While the basic needs common to all school buildings like classrooms, specialty spaces, assembly and administration will need to be addressed, the incorporation of a religious education is another important consideration in the future of the Bryn Athyn Church School. BACS stated mission is to help prepare students to be useful citizens of the world and to instill in them the values and habits needed by members of the Lord's heavenly kingdom. With religion heavily integrated into every aspect of the school's life, it is important to supplement direct religious instruction with indirect messages and teachings throughout the school building.

Through meetings and shared written documents, it has been made clear that maintaining and improving the connection with natural elements is very important for the New Church Community and the School. Nature is seen as "a theatre representative of the Lord's kingdom". As such, emphasizing the connections to sunlight, view corridors, structured outdoor spaces, and thoughtful landscaping are all important elements to consider in future design exercises. It is noteworthy that all of these elements are also considered elements of good architectural design and many have demonstrative educational and physical health benefits for building occupants. The connection to the outside spaces was one of the most pervasive positive statements made about the existing building, so there is certainly a history and desire to emphasize this connection in the future.

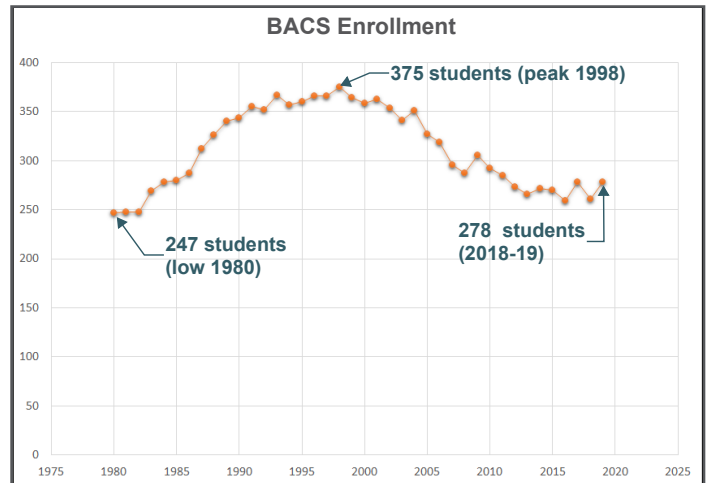
In addition to a connection to nature, an organized use of correspondence, representatives and imagery in the building design can also be used to reinforce spiritual teachings. Documents have been provided which describe in detail many of these correspondences with specific references to The Writings and suggestions of how this could apply to a school building. Elements such as building layout, structure, numbers, materials, decorations, colors, inclusion of animals, landforms, and landscaping could all be influenced by direct and indirect references to religious symbolism making the school uniquely New Church. This level of consideration is to be developed during the future design work associated with the renovations or new building elements.

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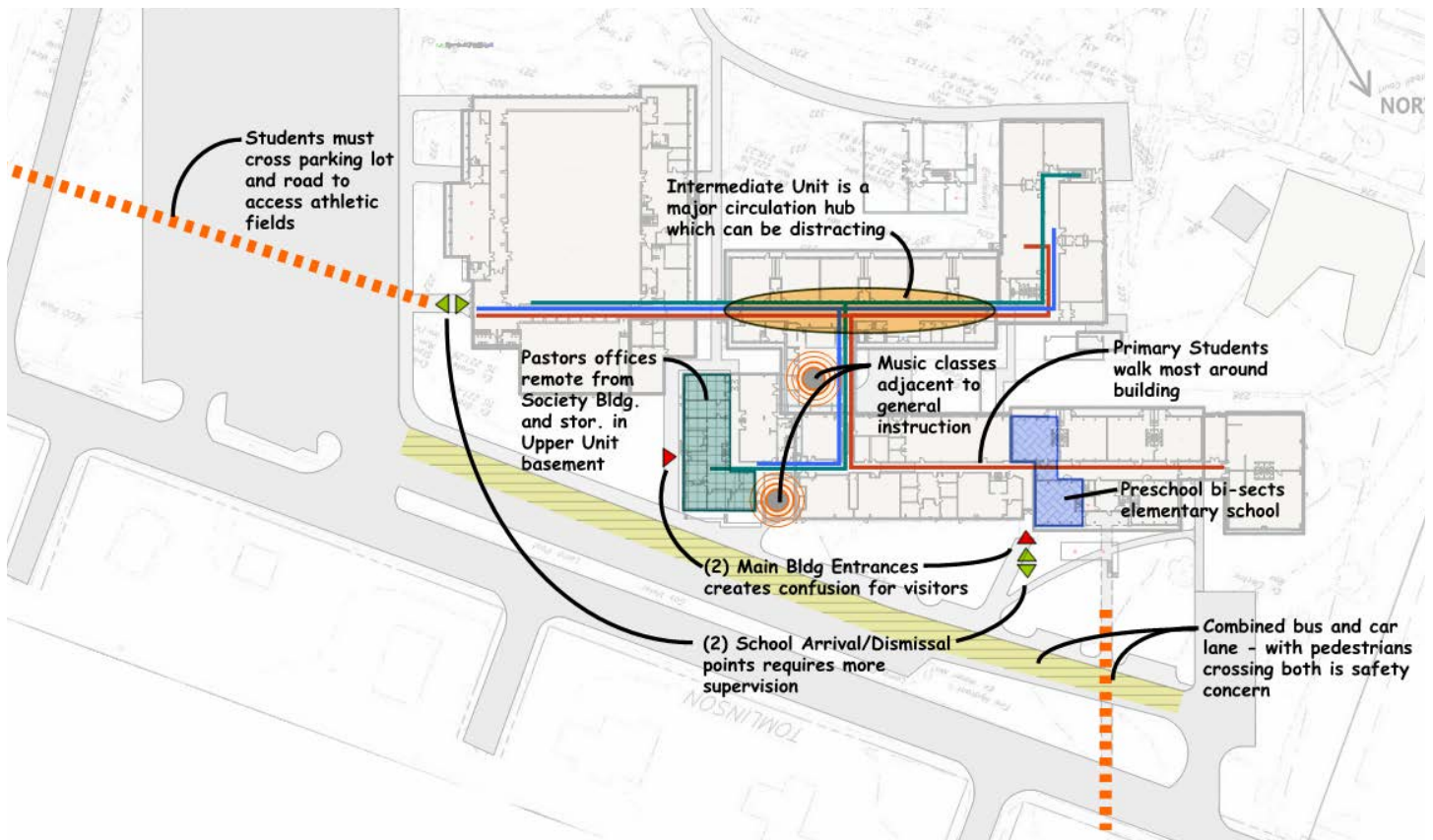
ENROLLMENT

There are no expectations of significant increase or decrease in student enrollment in the near future. Nearly 40 years of data (shown in the chart on right) indicates a fairly consistent bell with current enrollment near the lower end of historic numbers. While it is possible to have spikes from year to year, we do not expect the type of rapid growth that would require additional classroom facilities for core classes at this time. Therefore, enrollment has NOT been a primary decision making factor in this process. Based on these trends, even moderate growth can be accommodated within the existing facilities.



EXISTING LAYOUT CHALLENGES VS. IDEALIZED ORGANIZATIONAL DIAGRAM

As noted previously, this building serves many different groups and needs in the Community in addition to being an elementary school. Stacked onto that issue is the fact that the existing building footprint has evolved over time, with additions being located based more on immediate need, convenience, and cost than on any over-arching site planning vision. The result is a current building layout that is challenged in terms of function, navigation, and to some extent, safety. The following diagram points out some of these challenges in the existing layout.

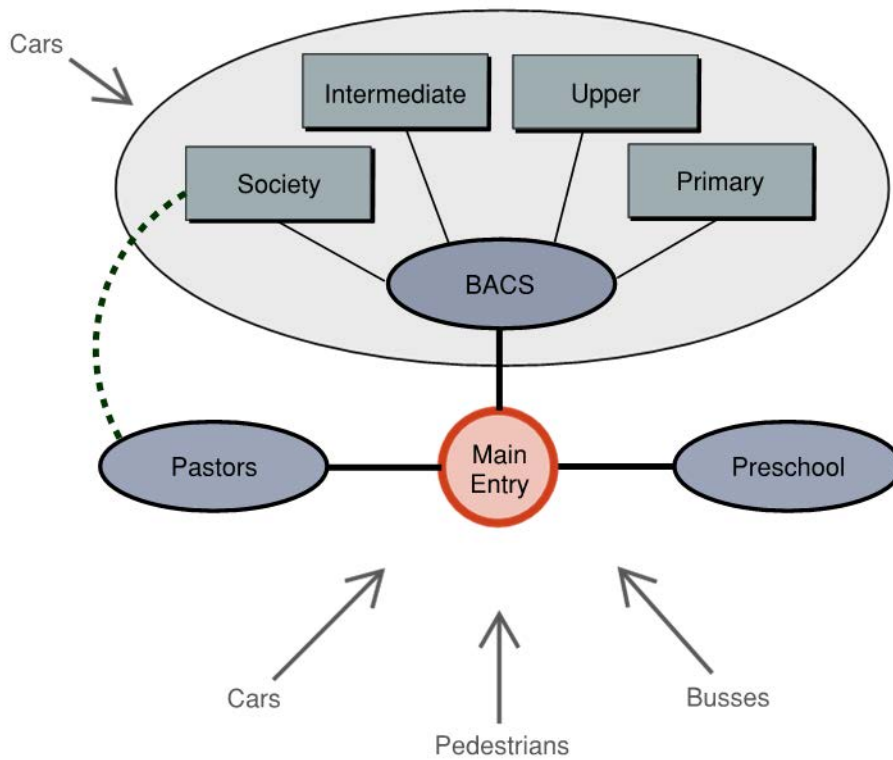


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The diagram below presents an idealized concept of how the building and site could function more effectively. Whether the project becomes an entirely new building or a renovation of existing, there are ways to improve some or all of these relationships. Goals for the designers would be:

- to separate cars from busses and pedestrians
- to utilize a single identifiable main entrance
- to split from main entrance to BACS, Preschool or Church
- to create a central core for BACS with common spaces and specialized classrooms
- to maintain grade level unit separation and identities
- to reduce corridor traffic pathways through grade level units
- to connect BACS to Society Building functions in a secure way from the common core
- to create a direct connection between Pastor's Office and Society Building



PROGRAM SPACE LIST

The following is a draft program list showing existing spaces and proposed adjustments for the future based on existing building information, recent user meetings, notes from past planning activity meetings, and my experience as an architect. I anticipate that this list will continue to evolve through discussion and planning events.

SPACE TYPE	EXISTING			PROPOSED			Net Adjustment		NOTES
	# OF SPACES	EXIST SF (AVG)	EXIST SF TOTAL	# OF SPACES	SF EA.	TOTAL SF	# OF SPACES	SF	
PROGRAM SPACES									
Primary Unit			10,260			10,410		300	
Kindergarten Classrooms	2	1,911	3,822	2	1,911	3,822	0	0	
Typical Classrooms	6	933	5,598	6	933	5,598	0	0	
Storage	1	440	440	1	440	440	0	0	
Classroom Toilets	16	25	400	10	45	450	-6	50	
Laptop Computer Storage	0	0	0	1	100	100	1	100	Maybe?
Teacher Workroom	0	0	0	1	150	150	1	150	
Intermediate Unit			5,301			5,716		415	
Classrooms	6	856	5,136	6	856	5,136	0	0	
Storage	3	55	165	6	55	330	3	165	
Laptop Computer Storage			0	1	100	100	1	100	Maybe?
Teacher Workroom	0	0	0	1	150	150	1	150	
Upper Unit			9,301			8,558		-743	
Upper Unit Classrooms	4	1,172	4,688	4	1,172	4,688	0	0	
Upper Unit Storage	4	77	308	4	77	308	0	0	
Shared Classroom	1	862	862	1	862	862	0	0	
Shop	1	700	700	1	700	700	0	0	
Central Storage	1	1,000	1,000	1	1,000	1,000	0	0	Not all used for Upper Unit
Computer Room	1	1,743	1,743	1	850	850	0	-893	Move 1/2 to library media ctr.
Teacher Workroom	0	0	0	1	150	150	1	150	
Student Support			2,525			2,825		300	
SSC Offices	6	125	750	6	125	750	0	0	
SSC Common Workroom	1	300	300	1	300	300	0	0	
Intermed. Unit Rooms	3	135	405	3	135	405	0	0	
Enrichment Trailer	1	595	595	1	595	595	0	0	Make into internal classroom
Volunteers (+stor)	1	475	475	1	475	475	0	0	
Primary Unit Workspace	0	0	0	2	150	300	2	300	
Science			1,028			1,600		572	
Classroom/Lab	1	808	808	1	1,200	1,200	0	392	
Prep / Project Room	1	130	130	1	200	200	0	70	
Storage	1	90	90	1	200	200	0	110	
Music			3,045			3,175		130	
Large Room	1	1,625	1,625	1	1,625	1,625	0	0	
Strings Room	1	715	715	1	650	650	0	-65	
Practice Rooms	2	75	150	4	100	400	2	250	
Instrument Storage	1	75	75	1	200	200	0	125	
Music Library	2	240	480	1	300	300	-1	-180	
Chair Storage	0	0	0	1	200	200	1	200	
Computer Room	1	75	75	1	200	200	0	125	

SPACE TYPE	EXISTING			PROPOSED			Net Adjustment		NOTES
	# OF SPACES	EXIST SF (AVG)	EXIST SF TOTAL	# OF SPACES	SF EA.	TOTAL SF	# OF SPACES	SF	
			0			0	0	0	
Worship/Performance			5,914			6,614		700	
Large Room	1	3,228	3,228	1	3,228	3,228	0	0	
Chair Storage	0	0	0	1	250	250	1	250	
Stage & Backstage	1	1,321	1,321	1	1,321	1,321	0	0	
Theater Storage	1	495	495	1	495	495	0	0	
Social Lobby	1	870	870	1	870	870	0	0	
Pastor Storage	0	0	0	1	200	200	1	200	
Bleacher Storage	0	0	0	1	250	250	1	250	
Art			1,560			1,560		0	
Classroom	1	1,416	1,416	1	1,416	1,416	0	0	
Storage	3	48	144	3	48	144	0	0	
Gym/Kitchen			17,905			19,005		1,100	
Large Gym (divisible)	1	11,725	11,725	1	11,725	11,725	0	0	
Storage	1	1,700	1,700	1	1,700	1,700	0	0	
Locker Rooms	2	1,000	2,000	2	1,000	2,000	0	0	
Office	2	145	290	2	145	290	0	0	
Laundry	1	100	100	1	100	100	0	0	
Kitchen	1	1,295	1,295	1	1,295	1,295	0	0	
Pantry Storage	1	160	160	1	160	160	0	0	
Lounge	1	150	150	1	150	150	0	0	
Kid's Room	1	485	485	1	485	485	0	0	
Health/Fitness Classroom	0	0	0	1	600	600	1	600	
Table and Chair Storage	0	0	0	1	500	500	1	500	
Library			2,495			4,295		1,800	
Large Space	1	2,173	2,173	1	1,723	1,723	0	-450	Move to reading nook line
Media Lab	0	0	0	1	850	850	1	850	Comp rm moved from upper
Reading Nook -Story/Video	0	0	0	1	400	400	1	400	
Storage	1	89	89	1	89	89	0	0	
Office	1	83	83	1	83	83	0	0	
Workroom	1	150	150	1	150	150	0	0	
Large Group Instruction	0	0	0	1	1,000	1,000	1	1,000	Multi-purpose/After-care
Administration			1,909			2,562		653	
Waiting/Reception	0	0	0	1	200	200	1	200	
Secretary	1	165	165	2	100	200	1	35	
Private Offices	3	210	630	3	150	450	0	-180	
Conference Room	0	0	0	1	225	225	1	225	
Faculty Lounge	1	837	837	1	437	437	0	-400	
Curriculum Space	0	0	0	1	300	300	1	300	
Netwk/Server Space w/ desk	1	120	120	1	150	150	0	30	
General Building Storage	0	0	0	1	300	300	1	300	

SPACE TYPE	EXISTING			PROPOSED			Net Adjustment		NOTES
	# OF SPACES	EXIST SF (AVG)	EXIST SF TOTAL	# OF SPACES	SF EA.	TOTAL SF	# OF SPACES	SF	
Office Copy/Work/Toilet	1	157	157	1	200	200	0	43	
Small Meeting	0	0	0	1	100	100	1	100	
Nurses's Suite			267			361		94	
Waiting	1	203	203	1	100	100	0	-103	
Exam/Treatment Room	0	0	0	1	90	90	1	90	
Bathroom	1	28	28	1	45	45	0	17	
Office	0	0	0	1	90	90	1	90	
Storage	1	36	36	1	36	36	0	0	
Preschool			2,089			2,181		92	
Classrooms	2	914	1,828	2	914	1,828	0	0	
Classroom Toilets	4	22	88	2	45	90	-2	2	
Reception/Waiting	0	0	0	1	90	90	1	90	
Office	1	173	173	1	173	173	0	0	
Pastor's Office			2,625			2,653		28	
Private Offices	7	179	1,253	7	179	1,253	0	0	
Conference Rm	1	465	465	1	250	250	0	-215	
Group Lounge	0	0	0	1	250	250	1	250	
Open Office Work Area	1	500	500	1	500	500	0	0	
Storage - Office Files	1	75	75	1	100	100	0	25	
Storage - School Supplies	1	332	332	1	300	300	0	-32	
PROGRAM SPACE TOTALS			66,224 sf			71,515 sf		5,441 sf	

NON PROGRAM SPACES									
Lobby			1,018						
Corridors			12,707						
Stairways			296						
Custodial Closets	6	25	150						
Restrooms			1,082						
Central Utility Rooms			2,056						
Walls/chases/unusable			5,655						

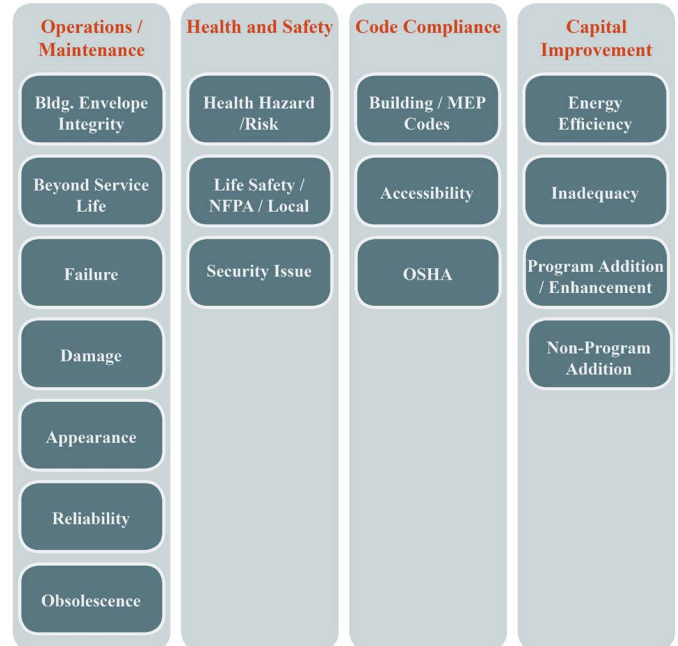
NON PROGRAM SPACE TOTALS **22,964 sf (26%)** **24,772 sf (26%)** **1,808 sf**

GRAND TOTALS **89,188 sf** **96,287 sf** **7,249 sf (7.8%)**

PART 4 - WHERE WE ARE

PRACTICAL CONSIDERATIONS OF EXISTING CONDITIONS

As stated at the end of the previous section, the integration of religious education and spiritual symbolism is an intrinsic part of the education provided at BACS and as such will be an important part of any renovations or new construction project. However, for the purposes of planning what to do with this aging facility, my commentary will concentrate on the more pragmatic considerations associated with your building conditions. The following categories will be evaluated: Operations and Maintenance, Health and Safety, Code Compliance, and Capital Improvements which includes meeting additional Space Needs. Part of the considerations will include evaluating the estimated costs of repairing the existing infrastructure with an assessment of where the “value” is in the existing facilities. Does it make sense to repair the existing if it isn’t the right type of space, can’t be modified easily to meet the space needs, or will continue to be an ongoing concern? Ultimately, the goal will be to identify the best plan for addressing the deficiencies and providing for modest program enhancements and growth.



Operations and Maintenance

The following issues identified in this report affect the cost of daily operations and maintenance of materials and equipment. These costs generally rise consistently with age, but certain spikes are to be expected as materials and equipment reach the end of their expected lifespan. According to independent studies, many of the building systems are at the end of their useful lives. Within 10 years, it is expected that most building systems will begin to fail. Emergency repairs can be very inconvenient and more costly to fix than planned maintenance. This would severely impact the operations and maintenance budget as well as create significant service interruptions. In addition, access to concealed spaces can require additional demolition and repairs beyond the extent of equipment.

The following conditions affect or will start to significantly affect Annual Operations and Maintenance Costs.

- Concealed piping and equipment not visible to inspectors may add to the cost of repairs/replacements in excess of provided estimates.
- Obsolescence of the pneumatic HVAC controls system makes repairs and replacements costly or impossible.
- Split systems have independent HVAC controls, which negates the possibility of a more efficient overall building wide system
- Panelboards and branch wiring are beyond their useful life and will require replacement. This is difficult and disruptive to accomplish in occupied space.
- Lack of grease interceptor at the kitchen requires more frequent (twice annual) sanitary pipe clearing.
- Society Building hot water tank is 30 years beyond it’s expected life and could fail at any time.
- Emergency lighting systems vary. A single system is preferred and would simplify testing and maintenance.

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- Building lighting is not consistent. Stocking all the various types and replacing lamps is costly and time consuming.
- 1980's era cladding is weathered, leaking and inefficient. Temporary measures have been somewhat successful at controlling leaks, but systems should be replaced.
- Exterior windows and doors are beyond their useful life. Many don't open or close properly, leak, and/or do not provide enough thermal protection. They require continual maintenance and loss of energy.
- Finish materials are being maintained, but age is making this more complicated. New patch materials can be difficult to find and this either results in a poor match or leaving the condition damaged.
- Casework and cabinetry – all original and past useful life. Again, other than those required for safety or function, repairs are typically not completed because the age and overall condition does not warrant the cost of repairing.

Health and Safety

The following are items that can be considered to affect the health and safety of building occupants. These items while not imminently life threatening, should be considered in future renovations. It is to be noted that of the items listed below, the 1954 and 1958 buildings were specifically designed to address issues of ventilation, openness and daylight.

- Ventilation and fresh air – not enough fresh air leads to health and performance problems.
- Existing mechanical ductwork gets dirty and can collect molds over time. An ongoing program of duct cleaning should be completed in addition to regular filter changes. Any existing ductwork to remain should be cleaned.
- Noise of window air conditioners has been reported to be a concern in classrooms and could affect the performance of some students.
- Studies have shown that daylight can positively affect both personal health and academic performance.
- GFI protected outlets should be provided in all spaces with outlets near water sources.
- Asbestos siding has been reported. It is currently not an exposure problem, but a program for removing all asbestos in the school is recommended.
- Safety glass should be provided in all corridor spaces, especially adjacent to doors and walking surfaces. This would apply to some of the classrooms and the large windows along the rear Society Building corridor.
- Interior door hardware should be lockable from inside the classroom or other primary spaces.
- Expanding card access system and electronic door monitoring

Code Compliance

It is expected that at the time of construction the building additions met then current codes. Although there are no requirements to constantly upgrade facilities to meet newer codes, if work is completed to change the existing conditions, then an Owner may be required to meet the current code for the changed element. In addition, if the overall extent of a project is significant then varying degrees of code compliance may be enforced throughout the building.

- Fresh air – Again, spaces likely met the code at the time, but also depended on operable windows. At this time many windows do not open and some spaces now used as classrooms don't have any windows.
- GFI Outlets mentioned in the safety section above are also code requirements.
- Door size and configurations don't meet ADA accessibility standards. The ADA is not technically a code, but is Federal Law enforced by local code officials.
- Toilet rooms have the same accessibility issues as the doors. Spaces may need to be reconfigured and/or additional accessible single user toilet rooms provided, depending on scope.

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Capital Improvements – A capital improvement is the addition of a permanent structural change or the restoration of some aspect of a property that will either enhance the property’s overall value, increase its useful life or adapt it to new uses. In addition to increasing and reconfiguring space, many of the suggested replacements will increase value to the property by decreasing energy and water usage. Some suggested capital improvements suggested for BACS include:

- Replacing mechanical equipment with more energy efficient systems
- Replacing lighting with LED fixtures
- Replacing plumbing fixtures with water efficient versions.
- Replacing windows and doors
- Where possible, provide all primary function spaces with natural daylight.
- Replacing and adding play structures at the exterior
- Making physical changes to site and building entrances to improve safety.
- Adding and reconfiguring building space to better support the mission of the school
 - possible relocation of office/admin to be adjacent to new site entrance
 - relocation of at least 1/2 of computer room to the library, making it a media center
 - relocation of preschool - within same building but not intertwined with elementary classes
 - layout improvements to centralize circulation to each unit
 - adding a multi-purpose space to function for special events and possibly a future After Care program
 - adding a classroom space associated with the gym for classes when gym is tied up with an event

VALUE – WHERE IS IT?

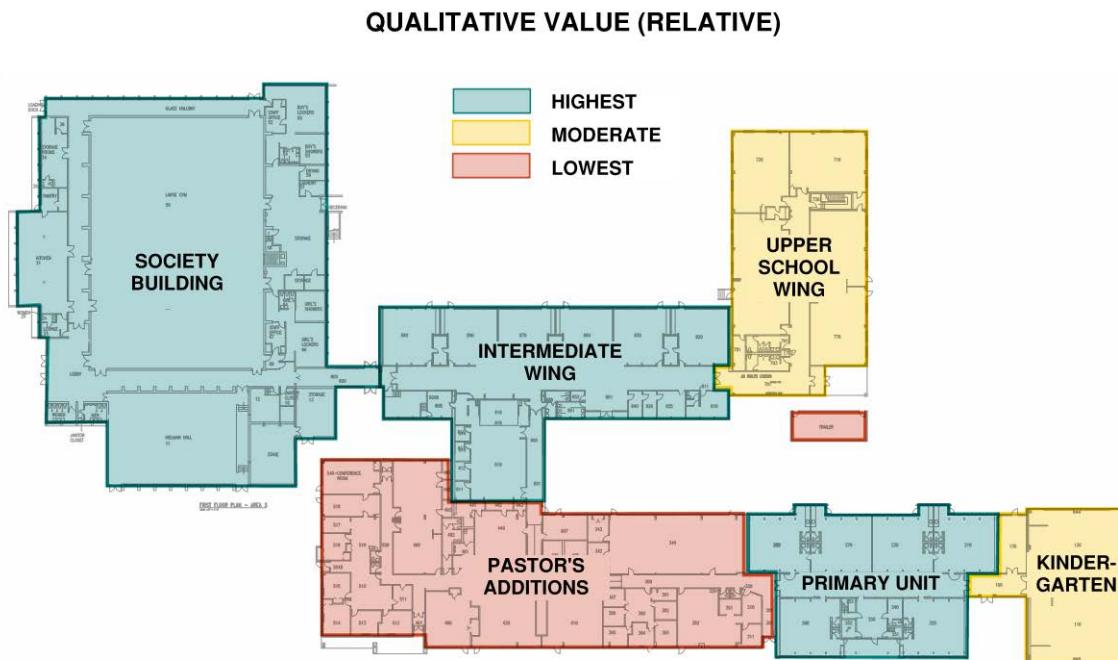
With the extensive repairs and replacements outlined, one can question whether it simply makes sense to replace the existing building with new construction. This approach will certainly be explored as the process moves forward, but a major component of our approach to planning the future of the Bryn Athyn Church School includes an examination of what part or parts of the existing building still have value and how that can be retained and reused. In doing so, I believe it is helpful to determine the relative value of various parts of the building. Value can be both quantitative, which means it can be measured or definitively assessed based on numbers, or it can be qualitative, which is an assessment of other qualities inherent to the subject. I believe that it is important to consider both.

In this existing building, the primary quantitative element to consider is whether the anticipated costs for repairs and replacements is higher in certain areas of the building than others. While total costs can and have been quantified, the individual reports around which this report is based makes a numeric comparison of specific building areas difficult. However, my professional assessment is that the costs are spread fairly evenly across all the buildings. While it’s true that certain areas are in worse condition than others for a specific component, there is no obvious area of the facility that is in dangerous or seriously deficient condition. For example, the Heilman Hall roof needs to be replaced soon as do all of the rooftop mechanical units, but the exterior walls are sound, there are comparatively fewer windows and doors needing replacement than other building areas and (excepting the lobby toilet rooms) there is little or no plumbing work required. So on balance, the overall square foot cost of renovating that space is likely not much different than the kindergarten addition that has deteriorating exterior facades, but a good roof. Certainly you can look at the totality of the estimated cost of repairs against new construction to assess the existing value, but generally, I don’t find the cost method to be very useful in comparing the *relative* value of various building areas.

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Qualitative considerations include: historic or architectural significance, emotional connections, and whether the space layout is still appropriate for the building's function. I do believe that this is where we can begin to see differentiation in value between various building areas which *MAY* be important to consider in the overall context. This is not intended to be a recommendation for replacement, but it may help inform the decision making process as the project moves forward. The following diagram and notes are in *relative* terms, comparing one area to another.



Primary Unit Wing - As the original structure on the site, this is the oldest construction, but due to its heavy timber and stone mass construction with deep overhangs, it remains in relatively good condition. While not “historic” in the traditional sense, it is the first building on campus and has significance to the Church Community. It still functions almost exactly as originally designed with little or no complaints other than age related maintenance concerns. With repairs, this area of the building should be considered as highly valuable relative to other areas of the school.

Intermediate Wing - As this portion of the building was constructed soon after the primary building by the same architect and in the same style, it also falls into the same category as the primary building. It is also to be noted that following construction of this addition, the school won an architectural citation in 1960 as an outstanding architectural accomplishment. Current teachers specifically noted they would sacrifice additional spaces and features to keep their classrooms. This is also a comparatively high value asset.

Society Building - While this building is not in itself architectural or historic, there is a reasonable level of quality in the forms as well as the heavy timber and mass wall construction. In addition, the layout is very functional and continues to meet the basic needs for the school and community. If a new school were constructed, these spaces would not be dramatically different than what exists currently. And no less important is the idea that there have been many weddings, funerals, concerts, plays, graduations, and other special events held in this building that contribute to emotional connections to the spaces.

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Kindergarten Addition - This addition marked the first construction on site that was not in the heavy timber model, it has no architectural or aesthetic value. It's valuable assets would be that teachers love the generous size of the rooms and appreciate the way the spaces function. The physical location of this addition appears appropriate and does not hamper other functions. I would categorize this addition as a moderately valuable asset.

Upper School Unit - This addition also has no architectural or aesthetic value, and the construction materials and methods are not of particularly high quality, but it is the newest construction on site. Also, as the Upper School, its size and location relative to other areas of the school seems appropriate. I would also identify this addition as moderately valuable.

Pastor's Additions - This addition has served the school and community fairly well; however, it is perhaps the piece with the most negative qualities. Continuing in the steel construction model, it does not have any particular architectural or aesthetic value. Additionally, its location often confuses visitors who are unsure of where to enter for the school or church offices, it lacks physical connections to critical building locations, and the layout creates awkward adjacencies for some program elements. With a lot of layout challenges and few redeeming qualities, this would be considered the lowest relative value area of the building.

Trailer - Installed in 1999, this was to be a temporary addition to meet the grade level needs of an enrollment bubble. It is no longer used for that purpose, and it's current enrichment program would be better suited in the main building. It not only has little value, but should be removed in any future project.

MOVING FORWARD – NEXT STEPS

This report has outlined many areas at the Bryn Athyn Church School that will require repair or replacement in the next 3-15 years. Part 2 concludes with a cost summary for approximately \$8.3 million dollars worth of these repairs and replacements. Based on the space needs analysis, we have quickly estimated that a new 96,000 sf new building on this same site could cost roughly \$33.9 million. Because there is both inherent value in the existing facility and certain undeniable needs for improvement, we believe that the most appropriate path forward probably lies somewhere in the middle of these two scenarios.

The next steps will be focused on examining various options and costs in order to responsibly plan for the future. While we will consider the extremes of a repairs only scheme and a total replacement, our primary expectation is to find ways:

1. to examine the shared spaces and find better ways to separate society functions from elementary school spaces
2. to consider building modifications strategically - in ways that improve safety and function
3. to balance repairs, renovations and new construction in order to restore life and vitality to the existing school for future generations

We understand the importance of this building to the entire community. During this effort we have already met with a lot of building users. We will continue to look for feedback from students, parents, staff and the entire Community as the process moves forward. We plan to hold an Information and Listening Session later this year to provide more details, update the community on our progress, and listen to any and all comments or concerns that may exist.