G. BATISTA
ENGINEERING & CONSTRUCTION

STRUCTURAL INTEGRITY RESERVE STUDY

The Alexander Towers Condominium Association, Inc.

3505 South Ocean Dr., Hollywood, FL 33019

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Inspected on: May 3, 2024
Prepared on: May 3, 2024

I. Introduction

A Structural Integrity Reserve Study is defined as a study of the reserve funds required for future major repairs and/or replacement of the condominium/cooperative property performed as required under Florida Senate Bill 4-D: Building Safety & Florida Statue 718.112(2)(g). A residential condominium/cooperative association must have a structural integrity reserve study completed at least every 10 years after the condominium's/cooperative's creation for each building on the property that is three stories or higher in height, as determined by the Florida Building Code, which includes, at a minimum, a study of the following items as related to the structural integrity and safety of the building:

- Roof
- Structure, including load-bearing walls and other primary structural systems.
- Fireproofing and Fire Protection Systems
- Plumbing
- Electrical Systems
- Waterproofing and Exterior Painting
- Windows and Exterior Doors (Only if the association is responsible)
- Any other item that has a deferred maintenance or replacement cost that exceeds $10,000 and the failure to maintain such item, negatively affects the items listed above.

A structural integrity reserve study is based on a visual inspection of the condominium/cooperative property. As mentioned above, our inspection identifies each item of the property being visually inspected, states the estimated remaining useful life and the estimated replacement cost or deferred maintenance expense of each item of the condominium/cooperative property being visually inspected, and provides a reserve funding schedule with a recommended annual reserve amount that achieves the estimated replacement cost or deferred maintenance expense of each item being visually inspected by the end of the estimated remaining useful life of the item. The structural integrity reserve study may recommend that reserves do not need to be maintained for any item for which an estimate of useful life and an estimate of replacement cost cannot be determined, or the study may recommend a deferred maintenance expense amount for such item. The structural integrity reserve study may recommend that reserves for replacement costs do not need to be maintained for any item with an estimated remaining useful life of greater than 25 years, but the study may recommend a deferred maintenance expense amount for such item. As a conservative approach, any items referred to in this report with more than 25 years remaining lifespan will be taken into consideration in our analysis.

Although this study is required to be performed every 10 years, the cost of replacements expressed in this report are calculated and representative of the present-day industry costs at the time this report was prepared without taking into consideration the inflation rates over a 10-year period.

II. General Information

The Alexander Towers Condominium Association, Inc. is a fourteen-story condominium building. The property is located in Hollywood, FL within the limits of Broward County. The building was constructed in 1964 with the typical materials prevalent in the 1960's. Based on our visual inspection of the building, we were able to identify the following general items as related to the structural integrity and safety of the building:

- The ground floor is comprised of a typical reinforced concrete slab without any direct access to the foundation system of the building.
- The building has a typical CBS construction – Reinforced concrete framing system (concrete columns & tie beams).
- The main roof of the building is comprised of a typical flat roof with a modified bitumen membrane covered with a silicone coating.
- Standard PVC/Cast Iron/Copper plumbing lines throughout the building.
- Standard main electrical systems.
- Exterior stucco finish with standard paint.
- The building consists of 268 residential units and 9 commercial units.
- The association is responsible for the residential and commercial unit doors, and the doors and windows of the common areas only.

III. Analysis of Building Components

This section describes the visually inspected building components' condition, quantities, estimated remaining service life, and estimated cost of replacement at the time of inspection performed on May 3, 2024. Due to environmental and climatic variations, the average lifespan of the following components might be negatively affected thus reducing its useful service life. The remaining service life of these components is an estimate and should not be taken as definitive.

ROOF – FLAT ROOF SYSTEM-MODIFIED BITUMEN MEMBRANE COVERED WITH SILICONE COATING

As a crucial shield against the elements, the modified bitumen roof of your building plays a pivotal role in safeguarding its structural integrity. This section aims to provide you with insights into the life cycle of modified bitumen roofs, the aging processes they undergo, and the significance of proactive maintenance in ensuring the long-term protection of your property.

A. *The Aging Process:*

Modified bitumen roofs, like any building component, are subject to the effects of time and environmental conditions. Understanding how these roofs age is fundamental to assessing their current state and predicting their remaining useful life. Factors such as exposure to sunlight, temperature fluctuations, and mechanical stress contribute to the gradual wear and tear of the roofing material.

B. *Importance of Maintenance:*

Regular maintenance is the cornerstone of preserving the effectiveness of modified bitumen roofs. Neglecting this aspect can lead to accelerated deterioration, potentially resulting in leaks, structural damage, and other issues that compromise the building's integrity. Routine inspections, timely repairs, and preventive measures are essential to extending the lifespan of the roof and mitigating risks.

C. *Consequences of Neglect:*

Failure to address the maintenance needs of a modified bitumen roof can lead to a range of consequences, from water infiltration and mold growth to structural damage and decreased energy efficiency. In addition to compromising the building's aesthetics, these issues can pose risks to the health and safety of residents and result in costly emergency repairs.

D. *Understanding "Remaining Useful Life":*

The concept of "remaining useful life" is a critical metric for evaluating the current condition of your modified bitumen roof. This metric provides valuable information to

guide decisions regarding maintenance, repair, or replacement, enabling you to allocate resources effectively and prioritize the well-being and safety of residents.

E. Maximizing Safety and Well-being:

By gaining an understanding of the aging process, recognizing the importance of maintenance, and being aware of the potential consequences of neglect, you empower yourself to proactively care for your building's modified bitumen roof.

Type: The main roof is a typical flat roof with a modified bitumen membrane covered with a silicone coating.

Quantity: Approximately 33,205 square feet.

Condition: The roof appears to be in satisfactory condition.

Average Lifespan: Refer to the table presented at the end of this report.

Remaining Lifespan: Refer to the table presented at the end of this report.

Estimated Cost of Replacement: Refer to the table presented at the end of this report for the total amount we are recommending based on our experience and the size of the building.

STRUCTURE, LOAD-BEARING WALLS, AND PRIMARY STRUCTURAL SYSTEMS.

This section aims to provide a foundational understanding of how concrete structures, specifically slabs (floors), columns, and beams, age over time. Concrete, a vital component in modern construction, is known for its strength and durability. However, like all materials, it undergoes a natural aging process. By understanding this process and the importance of maintenance, you can effectively use the "remaining useful life" data provided in this report to maximize the longevity and safety of your building.

A. The Aging Process of Concrete:

Chemical Changes: Over time, concrete undergoes chemical changes, including carbonation, where carbon dioxide from the air reacts with calcium hydroxide in the concrete. This can lead to a decrease in alkalinity, which is essential for protecting the steel reinforcement from corrosion. In Florida, particularly in those buildings in close proximity to the ocean, the deterioration taking place in the concrete is accelerated.

Physical Changes: Concrete can experience shrinkage and thermal expansion due to temperature changes. Although this may not necessarily be the case in Florida, repeated cycles of freezing and thawing can cause micro-cracks and eventual structural weakening.

Environmental Factors: Hurricanes, storms and general exposure to harsh environmental conditions like moisture, salt (in coastal areas or from de-icing salts), and pollutants can accelerate the aging process, leading to issues like efflorescence (white, powdery substance on the surface), spalling, and reinforcement corrosion.

B. Importance of Regular Maintenance:

Inspections: Regular inspections are crucial for identifying early signs of wear and tear, such as cracks, spalling, or water damage. Early detection allows for timely repairs before problems escalate.

Preventive Measures: Applying sealants and waterproofing agents can protect against moisture penetration, one of the primary causes of concrete deterioration. Ensuring proper drainage around the structure also helps in preventing water-related damage.

Timely Repairs: Addressing minor issues promptly can prevent them from developing into major structural problems. This includes sealing cracks, replacing damaged concrete, and attending to any rusting of the steel reinforcement.

C. Utilizing 'Remaining Useful Life' Data:

Planning for Repairs and Upgrades: The 'remaining useful life' data in this report provides an estimate of how long the concrete slabs, columns and beams are expected to perform adequately under normal conditions.

Extending Lifespan: By adhering to recommended maintenance schedules and promptly addressing any identified issues, you can effectively extend the lifespan of the concrete structures beyond the estimated 'remaining useful life.'

Safety and Well-being: Regular maintenance not only prolongs the life of the building but also ensures the safety and well-being of its residents. A well-maintained structure reduces the risk of unexpected failures and accidents.

Understanding the natural aging process of concrete and the importance of regular maintenance is crucial in managing the longevity and safety of your building. The 'remaining useful life' data provided in this report is a valuable tool in this regard, enabling informed decision-making for maintenance and repair activities. By proactive management, you ensure the structural integrity and safety of the building, thereby safeguarding the well-being of all residents.

Type: Reinforced Concrete Framing and Floor Systems

Quantity: Undetermined

Condition: The concrete framing and floor systems are in good condition.

Average Lifespan: Refer to the table presented at the end of this report.

Remaining Lifespan: Although concrete is a very durable material, due to the location's proximity to the coast, spalling due to rebar corrosion usually manifests before the concrete naturally deteriorates. It is important to note that it is rarely possible to visually inspect and examine all the concealed construction, nor should be generally necessary. Our conclusions are based upon our experience and conditions examined in the exterior typical structural members of the building. Refer to the table presented at the end of this report.

Estimated Cost of Replacement: Concrete repairs are typically done on a unit-price basis and should be repaired as damages appear. Refer to the table presented at the end of this report for our recommendation based on our experience and the size of the building.

PLUMBING

As part of our commitment to ensuring the longevity and structural integrity of your building, we understand the importance of providing you with comprehensive information regarding the various components that contribute to its overall well-being. In this section, we will delve into the fundamentals of plumbing systems, their aging process, and the critical role they play in safeguarding your property.

A. *The Essence of Plumbing Systems:*

Plumbing systems are the unsung heroes of any structure, serving as the circulatory system that ensures the seamless flow of water and the efficient disposal of waste. Often hidden behind walls and beneath floors, these intricate networks of pipes, fittings, and fixtures are indispensable to the daily functionality of your building.

B. *Aging: Understanding the Lifecycle of Plumbing Systems*

Similar to any other component within a structure, plumbing systems undergo a natural aging process. Factors such as material degradation, water quality, and environmental conditions can contribute to wear and tear over time. Recognizing the signs of aging and implementing proactive maintenance measures are crucial in preserving the system's functionality and preventing potential issues.

C. *The Importance of Maintenance:*

Regular maintenance is the key to ensuring the optimal performance of your plumbing system. By addressing minor concerns promptly, you can prevent the escalation of problems and mitigate the risk of unexpected failures. Neglecting routine maintenance can lead to costly repairs, inconvenience for residents, and potential damage to the building's infrastructure.

D. *Consequences of Neglect:*

Failure to prioritize plumbing system maintenance can result in a cascade of issues, ranging from water damage and mold growth to compromised structural integrity. Additionally, undetected leaks and corrosion can lead to more extensive problems, impacting not only the plumbing system but also the overall safety and habitability of the building.

E. Understanding "Remaining Useful Life":

The “remaining useful life” metric is a valuable tool for assessing the current state of your plumbing system and developing a strategic plan for its future. By understanding the remaining useful life, you can make informed decisions about when and how to allocate resources for maintenance, repairs, or potential upgrades.

Type: A combination of PVC/Copper/Cast-Iron plumbing lines.

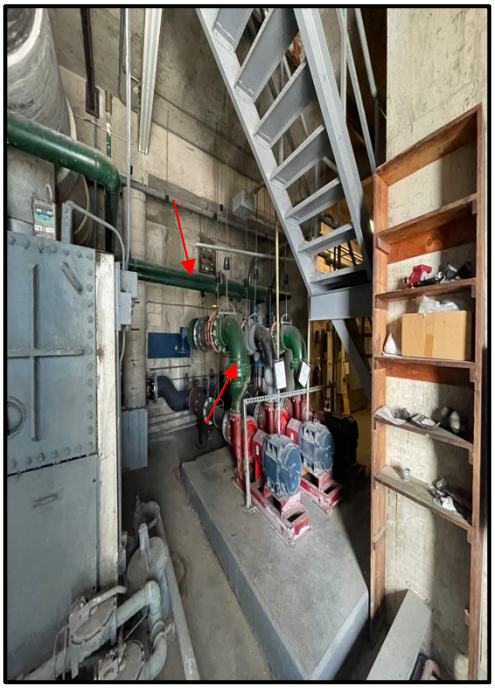
Quantity: Undetermined

Condition: The plumbing system appears to be in satisfactory condition. It is important to note that it is rarely possible to visually inspect and examine all the concealed construction, nor should be generally necessary. Our conclusions are based upon our experience and deficiencies found in the visible and readily accessible areas.

Average Lifespan: Refer to the table presented at the end of this report.

Remaining Lifespan: Refer to the table presented at the end of this report.

Estimated Cost of Replacement: Plumbing lines and systems are typically not replaced in their totality but are repaired as items appear. See the table presented at the end of this report for our recommendation based on our experience and the size of the building.



ELECTRICAL SYSTEMS

In the dynamic landscape of building infrastructure, the electrical system stands as a cornerstone, providing the lifeblood of power to sustain the daily operations of our homes and workplaces. Over time, however, this intricate network of wires, circuits, and components undergoes a natural aging process that necessitates a keen understanding of its dynamics for proactive management.

A. *Understanding the Aging Process of Electrical Systems*

Electrical systems, akin to any other infrastructure, undergo a natural aging process influenced by a variety of factors such as usage patterns, environmental conditions, and the quality of components. Over time, wear and tear, corrosion, and technological advancements can impact the efficiency and reliability of these systems. It is imperative to grasp the dynamics of this aging process to appreciate the necessity of proactive measures in ensuring continued functionality.

B. *The Vital Role of Electrical Systems in Building Safety*

Your building's electrical system plays a pivotal role in sustaining a secure and habitable environment for residents. From powering essential utilities to supporting safety features like lighting and fire alarm systems, the electrical infrastructure is the backbone of your property. Understanding its importance is integral to recognizing the significance of regular maintenance and strategic planning.

C. *Proactive Maintenance: Key to Longevity*

Effective maintenance practices are the cornerstone of extending the lifespan of your electrical system. Routine inspections, timely repairs, and adherence to industry standards can significantly mitigate risks and enhance overall system performance. By investing in proactive maintenance, you not only ensure the reliability of the electrical infrastructure but also contribute to the safety and well-being of those residing within the premises.

D. *Consequences of Neglect*

Failure to address the maintenance needs of your electrical system can lead to severe consequences, including electrical fires, system malfunctions, and potential hazards to occupants. Neglecting the signs of aging or disregarding necessary repairs may result in costly emergency interventions and, more critically, compromise the safety of your building's residents.

E. Utilizing Remaining Useful Life

Our reserve study provides you with a critical metric - the Remaining Useful Life (RUL) of your electrical system. This value represents the estimated time your electrical system can continue to operate effectively with regular maintenance. Understanding and utilizing this information empowers you to make informed decisions, allocate resources efficiently, and implement strategic plans to extend the life of your electrical infrastructure.

Type: Standard electrical system.

Quantity: Single electrical room

Condition: The electrical system(s) is in satisfactory condition.

Average Lifespan: Refer to the table presented at the end of this report.

Remaining Lifespan: Refer to the table presented at the end of this report.

Estimated Cost of Replacement: Refer to the table presented at the end of this report for our recommendation based on our experience and the size of the building.

EXTERIOR ENVELOPE FINISH - STUCCO

In this section, we will explore the fundamental aspects of exterior stucco, a commonly used material in building construction in Florida known for its durability and aesthetic appeal. Understanding the aging process of stucco, its role in protecting your building, and the best practices for maintenance will help you make informed decisions about preserving the exterior of your building. Additionally, this knowledge will assist you in utilizing the "remaining useful life" data provided in this report to extend the lifespan of your stucco and ensure the safety and well-being of the building's occupants.

A. *Aging Process of Exterior Stucco:*

Natural Wear and Tear: Stucco, though durable, is subject to natural wear over time. Factors such as weathering, thermal expansion and contraction, and exposure to moisture and pollutants can affect its condition.

Cracking and Deterioration: Minor cracks are common in stucco due to its rigid nature and can be exacerbated by building settlement, expansions, and contractions, or seismic activity (not normally existent in Florida). If left unaddressed, these cracks can lead to water infiltration and more significant deterioration.

Color Fading and Surface Damage: Continuous exposure to sunlight can lead to fading and discoloration. Surface damage may also occur from physical impacts or environmental factors.

B. *Importance of Stucco in Building Protection:*

Weather Barrier: Stucco acts as a protective layer against various weather conditions, shielding the underlying building materials from rain, wind, sun, and the harsh weather conditions that prevail in Florida.

Insulation Properties: It contributes to the thermal insulation of the building, aiding in energy efficiency and comfort.

Aesthetic Value: Stucco also plays a significant role in the aesthetic appeal of a building, contributing to its overall value and curb appeal.

C. *Maintenance and Upkeep:*

Regular Inspections: Conduct routine inspections to identify any cracks, chips, or signs of water damage. Early detection of these issues is crucial for timely repairs.

Prompt Repairs: Address minor damages promptly to prevent water infiltration and more extensive damage. This includes patching cracks and ensuring proper sealing.

Cleaning and Recoating: Periodic cleaning can prevent a build-up of dirt and pollutants. Recoating or repainting may be necessary to maintain its appearance and protective qualities.

D. Utilizing 'Remaining Useful Life' Data:

Proactive Maintenance Planning: Use the 'remaining useful life' data as a guide to plan for maintenance, repairs, or recoating. This proactive approach can prevent sudden failures and costly emergency repairs.

Budgeting for Future Needs: Understanding the expected lifespan of your stucco allows for better financial planning for future maintenance or replacement needs.

Safety and Preservation: Regular maintenance not only extends the life of the stucco but also ensures the overall safety and integrity of the building. A well-maintained exterior helps protect against structural damage and maintains a safe environment for residents.

By gaining an understanding of how exterior stucco ages, its importance in building protection, and the essential practices for its maintenance, you are better equipped to use the 'remaining useful life' information effectively. This knowledge empowers you to make informed decisions that will prolong the life of the stucco, enhance the building's appearance, ensure structural integrity, and provide a safe living environment for all occupants.

Type: Textured-finished stucco.

Quantity: Approximately 140,000 square feet.

Condition: The exterior stucco is in good condition.

Average Lifespan: Refer to the table presented at the end of this report.

Remaining Lifespan: Although the stucco is a very durable material, due to the location's proximity to the coast, spalling due to rebar corrosion usually manifests before the stucco naturally deteriorates. Refer to the table presented at the end of this report.

Estimated Cost of Replacement: The removal and replacement of all the stucco finish is rarely required. It is typically repaired as required in the building for general maintenance. Therefore, we assume that 10% of all exterior surfaces are required to be replaced at once. See the table presented at the end of this report for our recommendation based on our experience and the size of the building. (The exact amount of area needing replacement will be discretionary based on the actual future conditions and the desired appearance).

EXTERIOR FAÇADE – PAINTING & WATERPROOFING

This section is dedicated to elucidating the essential aspects of the exterior paint and waterproofing systems used in your building. As an engineer, I aim to provide you with a clear understanding of how these components age, their pivotal role in safeguarding the building, and the best practices for their maintenance. Grasping these concepts will enable you to effectively use the "remaining useful life" data from this report to maximize the lifespan of your building's exterior coatings and waterproofing, thereby ensuring the safety and well-being of its occupants.

A. *Aging of Exterior Paint and Waterproofing:*

Degradation Over Time: Exterior paint and waterproofing layers degrade due to exposure to various elements like sunlight (UV radiation), temperature fluctuations, moisture, and environmental pollutants. This degradation manifests as fading, chalking, blistering, or peeling of paint and the breakdown of waterproofing membranes.

Waterproofing Deterioration: The waterproofing layer, essential for preventing water ingress, can deteriorate due to factors like poor initial application, building movements, and prolonged exposure to standing water and harsh weather.

Impact of Climatic Conditions: The rate of aging can vary significantly based on local climatic conditions such as is the case in Florida with significant amounts of yearly rainfall and storms. Buildings in coastal areas may experience even more accelerated degradation.

B. *Importance in Building Protection:*

Barrier Against Elements: The primary role of exterior paint and waterproofing is to act as a defensive layer against water, sun, and environmental damage, thereby protecting the structural integrity of the building.

Preventing Moisture Damage: Effective waterproofing is crucial in preventing water seepage, which can lead to mold growth, decay in building materials, and overall deterioration of structural elements.

Aesthetics and Property Value: Well-maintained exterior paint contributes significantly to the aesthetic appeal and can enhance the property's value.

C. *Maintenance and Upkeep:*

Routine Inspections: Regularly inspect the exterior coatings and waterproofing for signs of damage or wear. Look for cracks, peeling, blistering, or any signs of water penetration.

Timely Repairs and Reapplication: Address any damage promptly to prevent exacerbation. This may include patching up minor damages or a complete reapplication of paint and waterproofing layers as necessary.

Quality Materials and Proper Application: Using high-quality materials with reasonable warranties, and ensuring proper application techniques are crucial for longevity. Consider consulting with professionals for best results.

D. *Utilizing 'Remaining Useful Life' Data:*

Future Planning and Budgeting: The 'remaining useful life' information helps in forecasting when major maintenance or reapplication will be required, allowing for effective budget planning.

Extending Lifespan: Proactive maintenance based on this data can extend the life of your exterior coatings and waterproofing beyond their estimated lifespan.

Ensuring Safety and Comfort: Regular upkeep not only preserves the building's appearance but also ensures its structural integrity and the safety of its residents.

Understanding the dynamics of how exterior paint and waterproofing age and the necessity of their maintenance is crucial for the long-term well-being of your building. The 'remaining useful life' data provided in this report is a valuable tool for planning and executing maintenance strategies that will enhance the lifespan of these essential components, ensuring both the aesthetic appeal and structural safety of your property.

Type: Standard Exterior Waterproofing and Paint.

Quantity: Approximately 140,000 square feet.

Condition: The surfaces appear in satisfactory condition.

Average Lifespan: Refer to the table presented at the end of this report.

Remaining Lifespan: Refer to the table presented at the end of this report.

Estimated Cost of Replacement: See the table presented at the end of this report for our recommendation based on our experience and the size of the building.

FIREPROOFING AND FIRE PROTECTIONS SYSTEMS

This section is intended to provide an overview of the fire protection systems (including fire alarms, fire sprinklers, and smoke detectors as may be present in your building). As an engineer, my goal is to help you understand the fundamental aspects of these systems' lifespans, their critical role in ensuring safety, and the importance of regular maintenance. With this knowledge, you can effectively use the "remaining useful life" data from this report to prolong the effectiveness of your fire protection systems, thus ensuring the safety and well-being of the building's occupants.

A. *Understanding the Aging of Fire Protection Systems:*

Wear and Tear Over Time: Fire protection equipment, like all mechanical and electronic systems, experiences wear and tear. Components can become less reliable due to factors such as dust accumulation, mechanical degradation, and outdated technology.

Technological Advancements: As technology advances, older systems may become obsolete or less effective compared to newer systems that offer enhanced detection and suppression capabilities.

Environmental Impact: Environmental factors such as humidity, temperature fluctuations, and exposure to pollutants can affect the performance and lifespan of these systems.

B. *Importance of Fire Protection Systems in Building Safety:*

Life Safety: The primary purpose of fire protection systems is to save lives by providing early warning (via alarms and detectors) and suppressing fires quickly (through sprinkler systems).

Property Protection: These systems also play a vital role in minimizing property damage by containing fires and preventing their spread.

Compliance with Safety Standards: Regular maintenance and upgrades are not just important for safety; they are often required to comply with local fire codes and insurance requirements.

C. *Maintenance and Upkeep:*

Regular Inspections and Testing: In addition to the repairs and replacements that may be necessary as per this report, conduct routine inspections and testing as per the guidelines set by the local codes (Including the Florida Building Code), the National Fire

Protection Association (NFPA) and the local City/County authorities. This includes checking battery life and testing alarm functionality is in good working order.

Immediate Repairs and Updates: Address any identified issues immediately. This may include replacing batteries, repairing damaged components, or updating systems to meet current safety standards.

Professional Assessments: Utilize the services of qualified professionals to conduct thorough inspections and maintenance. This ensures that all components of the fire protection system are functioning optimally.

D. *Utilizing 'Remaining Useful Life' Data:*

Planning for Upgrades and Replacements: Use the 'remaining useful life' data as a guide to plan for necessary upgrades or replacements. This proactive approach helps in ensuring continuous protection and compliance with safety standards.

Budgeting for Future Needs: Understanding the expected lifespan of your fire protection systems allows for more accurate budgeting for future maintenance or replacement costs.

Ensuring Ongoing Safety: Regular maintenance and timely upgrades based on the 'remaining useful life' data contribute significantly to the ongoing safety and security of the building's residents.

A comprehensive understanding of the aging, importance, and maintenance requirements of your building's fire protection systems is essential for ensuring the safety of its occupants. The 'remaining useful life' data provided in this report is a critical tool for effective long-term planning and management of these systems. By adopting a proactive approach to maintenance and upgrades, you can significantly enhance the safety and well-being of everyone within the building.

Type: Standard fire alarm and sprinkler systems.

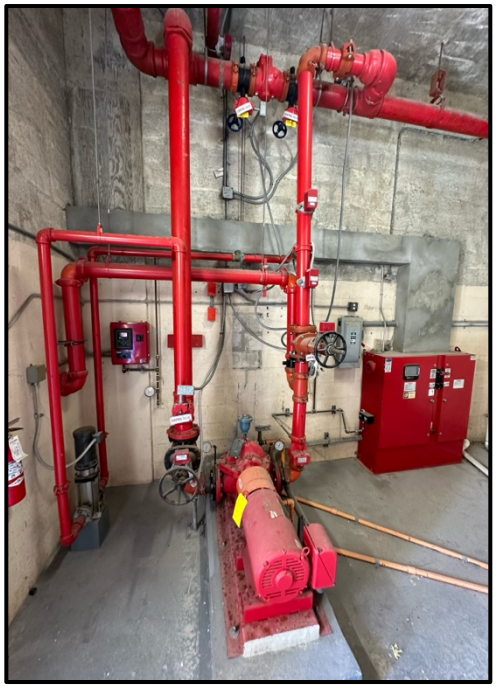
Quantity: N/A

Condition: The fire protection systems appear to be in unsatisfactory condition.

Average Lifespan: Refer to the table presented at the end of this report.

Remaining Lifespan: Refer to the table presented at the end of this report.

Estimated Cost of Replacement: Fire protection systems such as the ones observed in the building are typically not replaced in their totality but are replaced as required. See the table presented at the end of this report for our recommendation based on our experience and the size of the building.



WINDOWS & DOORS (UNIT DOORS & COMMON AREAS ONLY)

This section is designed to provide a foundational understanding of the aging process, significance, and maintenance requirements of the exterior windows and doors in your building. As an engineer, my objective is to communicate these concepts in a manner that aids non-engineering clients in comprehending the vital role these elements play in the building's overall integrity and safety. Additionally, this information will guide you in effectively utilizing the "remaining useful life" data provided in this report to extend the service life of your building's exterior windows and doors, ensuring the safety and comfort of the residents.

A. Aging of Exterior Windows and Doors:

Wear and Tear Over Time: Exterior windows and doors are continually exposed to various environmental factors like sunlight, rain, wind, and temperature fluctuations, which contribute to their gradual wear and tear. This can manifest as warping, cracking, fading, or the breakdown of sealing materials.

Material Degradation: Different materials (wood, metal, vinyl, etc.) have varying lifespans and are susceptible to specific types of degradation. For instance, wooden frames may rot or warp, while metal ones might corrode or rust.

Seal and Insulation Deterioration: The sealants and weather-stripping around windows and doors degrade over time, leading to drafts, water leaks, and decreased energy efficiency.

B. Importance in Building Protection:

Structural Integrity: Windows and doors contribute significantly to the structural integrity of a building. Compromised frames or fittings can lead to safety and security issues.

Energy Efficiency: Properly functioning windows and doors are crucial for maintaining energy efficiency, preventing heat loss in winter and excess heat gain in summer.

Aesthetic and Functional Value: Beyond their practical roles, windows and doors also affect the building's aesthetic appeal and the comfort of its occupants.

C. Maintenance and Upkeep:

Regular Inspections: Conduct periodic inspections for signs of wear, damage, or sealant failure. Pay attention to smooth operation, signs of moisture infiltration, and any visible damage.

Timely Repairs: Promptly address issues like cracked glass, damaged frames, or deteriorating seals. Delays in repairs can lead to more significant problems, such as water damage or security risks.

D. Utilizing 'Remaining Useful Life' Data:

Proactive Replacement Planning: Use the 'remaining useful life' data to anticipate when replacements or major repairs will be needed. This aids in budgeting and planning for minimal disruption.

Extending Service Life: Regular maintenance, guided by the 'remaining useful life' data, can help extend the lifespan of your windows and doors beyond the estimated period.

Enhancing Safety and Comfort: Well-maintained windows and doors not only improve the building's safety and security but also contribute to the overall comfort and well-being of its occupants.

Understanding the factors that influence the aging of exterior windows and doors and recognizing their significance in the overall safety and efficiency of your building, is crucial. The 'remaining useful life' data in this report provides a valuable tool for managing these components effectively. By adopting a proactive approach to maintenance and replacement, based on this data, you can enhance the functionality, safety, and aesthetic value of your building, ensuring a comfortable and secure environment for all residents.

Type: Standard windows and doors.

Quantity: Approximately 950 windows and doors.

Condition: The windows and doors appear to be in satisfactory condition.

Average Lifespan: Refer to the table summary at the end of this report.

Remaining Lifespan: Refer to the table summary at the end of this report.

Estimated Cost of Replacement: Refer to the table presented at the end of this report for our recommendation based on our experience and the size of the building.

EXECUTIVE SUMMARY

As a summary of the above information, we have developed the following table:

The Alexander Towers Condominium Association, Inc. Structural Integrity Reserve Study Summary								
Item	Description	Estimated Quantity	Units	Lifespan (Yrs.) Useful	Lifespan (Yrs.) Remaining	Estimated Cost of Replacement		
Roof System (Includes all flat roofs)	Flat w/ Modified Bitumen, Covered w/ Silicone	33,205	Square Feet	10 to 20	6	$332,050	to	$498,075
Structural Load Bearing Members	Concrete	Undetermined	Undetermined	30 to 60	40	$200,000	to	$400,000
Plumbing	PVC/Cast Iron	Undetermined	Linear Feet	40 to 80	40	$200,000	to	$400,000
Electrical	Standard	Undetermined	Linear Feet	30 to 60	30	$150,000	to	$300,000
Exterior Finish (Stucco)	Stucco	140,000	Square Feet	20 to 40	20	$70,000	to	$140,000
Exterior Waterproofing & Painting	Standard	140,000	Square Feet	5 to 15	10	$700,000	to	$1,120,000
Fireproofing & Fire Protection System (ELSS not included)	Fire Alarm System	N/A	Each	10 to 15	10	$600,000	to	$1,000,000
Windows & Doors (Unit Doors & Common Areas Only-Aprox. Quantity)	Standard Aluminum	>950	Each	30 to 60	40	$3,000,000	to	$6,000,000
Miscellaneous (Cooling Tower)	Standard	Undetermined	Each	15 to 30	15	$250,000	to	$500,000
					TOTALS:	$5,502,050	to	$10,358,075

See the table continuation on the following page.

The Alexander Towers Condominium Association, Inc. Estimated Yearly Reserve Contribution												
Item	Average Remaining Life	Average Replacement Estimated Cost (TODAY)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Roof System (Includes all flat roofs)	6	$415,063	$ 69,177.08	$ 69,177.08	$ 69,177.08	$ 69,177.08	$ 69,177.08	$ 69,177.08	$ 27,670.83	$ 27,670.83	$ 27,670.83	$ 27,670.83
Structural Load Bearing Members (Concrete)	40	$300,000	$ 7,500.00	$ 7,500.00	$ 7,500.00	$ 7,500.00	$ 7,500.00	$ 7,500.00	$ 7,500.00	$ 7,500.00	$ 7,500.00	$ 7,500.00
Plumbing	40	$300,000	$ 7,500.00	$ 7,500.00	$ 7,500.00	$ 7,500.00	$ 7,500.00	$ 7,500.00	$ 7,500.00	$ 7,500.00	$ 7,500.00	$ 7,500.00
Electrical	30	$225,000	$ 7,500.00	$ 7,500.00	$ 7,500.00	$ 7,500.00	$ 7,500.00	$ 7,500.00	$ 7,500.00	$ 7,500.00	$ 7,500.00	$ 7,500.00
Exterior Finish (Stucco)	20	$105,000	$ 5,250.00	$ 5,250.00	$ 5,250.00	$ 5,250.00	$ 5,250.00	$ 5,250.00	$ 5,250.00	$ 5,250.00	$ 5,250.00	$ 5,250.00
Exterior Waterproofing & Painting	10	$910,000	$ 91,000.00	$ 91,000.00	$ 91,000.00	$ 91,000.00	$ 91,000.00	$ 91,000.00	$ 91,000.00	$ 91,000.00	$ 91,000.00	$ 91,000.00
Fireproofing & Fire Protection System	10	$800,000	$ 80,000.00	$ 80,000.00	$ 80,000.00	$ 80,000.00	$ 80,000.00	$ 80,000.00	$ 80,000.00	$ 80,000.00	$ 80,000.00	$ 80,000.00
Windows & Doors (Unit Doors & Common Areas Only)	40	$4,500,000	$ 112,500.00	$ 112,500.00	$ 112,500.00	$ 112,500.00	$ 112,500.00	$ 112,500.00	$ 112,500.00	$ 112,500.00	$ 112,500.00	$ 112,500.00
Cooling Tower	15	$375,000	$ 25,000.00	$ 25,000.00	$ 25,000.00	$ 25,000.00	$ 25,000.00	$ 25,000.00	$ 25,000.00	$ 25,000.00	$ 25,000.00	$ 25,000.00
Assumed Interest Rate = 0.57% (Not being applied)	TOTAL	$7,930,063										
Assumed Inflation Rate = 4% (Not being applied)		Total Annual Reserve Amount=	$ 405,427.08	$ 405,427.08	$ 405,427.08	$ 405,427.08	$ 405,427.08	$ 405,427.08	$ 363,920.83	$ 363,920.83	$ 363,920.83	$ 363,920.83
Amount of Units= 277		Annual Fee/Unit=	$ 1,463.64	$ 1,463.64	$ 1,463.64	$ 1,463.64	$ 1,463.64	$ 1,463.64	$ 1,313.79	$ 1,313.79	$ 1,313.79	$ 1,313.79

IV. Conclusions

This SIRS report only considers the physical limits of the building itself while still complying with the minimum requirements of the Structural Integrity Reserve Study. This report only includes the windows and doors of the common areas only and the doors to each unit. According to our visual inspection and analysis of the collected data regarding the Structural Integrity Reserve Study performed we recommend the HOA to maintain reserve funds between **$5,502,050 – $10,358,075** for future major repairs and replacement costs to comply with the minimum requirements specified in the Florida Senate Bill 4-D: Building Safety & Florida Statue 718.112(2)(g), signed into law in May 2022.

V. Closing

Our analysis and opinions are based on our years of experience and knowledge in the construction and engineering industry. The information provided above is estimated and is in accordance with the procedures, practices, and standards generally accepted in the industry. Further, please be aware that our analysis was a non-destructive assessment. Any damage visually concealed and additional work, not itemized above, will be required to be inspected to properly render an opinion. Should you have any additional questions, please contact the undersigned.

VI. Assumptions:

a. The amounts stated in this report do not consider the HOA's financial condition nor the amounts currently paid by the residents/owners.
b. We assume that the annual inflation rate, which affects the estimated costs of future repairs and replacements, will be maintained at a low rate between 3% to 5%. Refer to Appendix “A” for additional information.
c. Interest Rate: Assumed rate at which reserve funds will earn interest over time. We assume current market interest rates. Refer to Appendix “B” for more information.
d. Replacement Costs: Estimates of future replacement costs, which may be based on current prices adjusted for inflation or on quotes from contractors. Refer to Appendix “C” for more information.
e. Repair and Maintenance Schedule: We assume that the owner will adhere to adequate and reasonable repair and maintenance schedule for their property. Refer to Appendix “D” for more information.

VII. Clarifications:

a. There are limitations of the study, which include unknown and/or hidden conditions, changes in laws or regulations, or unforeseen economic changes. Refer to Appendix "E" for more information.

If you have any questions, please do not hesitate to contact us.

Sincerely,

Digitally signed by Gregorio Batista
Date: 2024.08.22 17:08:55 -04'00'

Gregorio Batista
President, G. Batista Engineering & Construction
Professional Engineer (PE) Lic. #52349
General Contractor Lic. #CGC060313

Appendix "A"

Inflation Rate Assumption Explained:

When we talk about the future—especially in terms of planning for repairs and replacements in your building—we need to consider how the cost of goods and services tends to rise over time. This increase in costs is known as inflation. Inflation affects how much money will be needed in the future to maintain the building and its amenities to the standard you enjoy today.

In our reserve study, we make an assumption about the annual inflation rate. This is our best estimate of how quickly we expect costs to increase year over year. For example, if we assume an inflation rate of 3%, we are saying that what costs $100 today would cost $103 next year, and so on, increasing each year.

Why is this important for your building?

> Accurate Budgeting: It helps us more accurately predict how much money the Owner needs to set aside now, to ensure there are enough funds available to handle future repairs and replacements—like fixing the roof, updating the HVAC system, or resurfacing the pool—without financial strain.
>
> Financial Planning: By considering inflation, we ensure that the reserve fund grows in a way that matches or exceeds the pace at which costs are expected to rise. This means the building won't fall short of funds when a major repair is needed, avoiding the need for sudden special assessments or increases in fees.
>
> Sustainable Maintenance: Planning for inflation allows for a sustainable approach to maintaining the property. It ensures that the condominium can continue to provide a safe, comfortable, and appealing environment for all residents, enhancing both your quality of life and the value of your property.

In summary, the inflation rate assumption is a critical part of our financial planning process. It ensures that we're not just thinking about the costs of today but are also prepared for the expenses of tomorrow. This proactive approach helps keep your building well-maintained and financially stable, protecting your investment.

Appendix "B"

Interest Rate Assumption Explained:

In managing the finances of your building, we don't just set aside money for future repairs and replacements; we also aim to make this money grow over time. This growth comes from

earning interest on the reserve funds, which are the savings set aside for major maintenance tasks and replacements in the future. The "Interest Rate" assumption is our educated guess on how much interest these funds will earn each year.

Think of the reserve fund as a savings account for the building. Just like your savings account earns interest, so does the reserve fund. The interest rate assumption is important for several reasons:

Growth of Funds: It estimates how much the reserve funds will increase through interest. This helps in understanding not just how much we're saving, but also how much those savings will grow, giving us additional funds to work with in the future.

More Accurate Financial Planning: By estimating the interest rate, we can better predict the total amount of funds that will be available for future projects. This means we can plan more accurately for when we can afford to undertake large repairs or replacements without putting financial strain on the building's community.

Minimizing Contributions: Knowing how much interest the reserve funds are expected to earn can help in determining the necessary contributions from the building's residents. If the funds are expected to earn a substantial amount of interest, it may reduce the need for higher contributions or special assessments.

Inflation Offset: While the funds are growing through interest, they are also helping to offset the effects of inflation on future costs, making it easier to keep up with the rising prices of repairs and replacements.

In our reserve study, we assume an interest rate based on current market conditions. However, it's important to note that interest rates can fluctuate over time due to economic changes. Our assumption is a conservative estimate designed to ensure financial stability and preparedness for the future, without relying too heavily on optimistic forecasts.

In summary, the interest rate assumption is a part of our strategy to manage and grow the reserve funds effectively. It allows us to plan with greater confidence, ensuring that we can maintain and enhance our building's value and livability without imposing unnecessary financial burdens on our community.

Appendix "C"

Replacement Costs Explained:

In our reserve study for your building, one of the key factors we consider is the "replacement costs." This term might sound a bit technical, but it simply refers to the estimated amount of

money that will be needed in the future to repair or replace parts of the building and its common elements, such as the roof, and other components that apply to this SIRS. These components wear out or become outdated over time and will need to be replaced to keep the building safe, functional, and comfortable for everyone.

However, estimating these costs isn't as straightforward as looking at today's price tags. Here's why:

Inflation: Just like the price of groceries goes up over time, the cost of building materials, labor, and services also increases. To make sure we're accurately predicting how much money will be needed in the future, we adjust current prices for expected inflation. This means if a new roof costs $10,000 today, but we expect prices to go up due to inflation, we might estimate it will actually cost $12,000 when the replacement is needed in several years.

Current Quotes: Sometimes, we also get quotes from contractors to understand how much a specific replacement or repair would cost today. This gives us a more accurate starting point before adjusting for inflation, especially for specialized items or services.

Why Is This Important?

Understanding and planning for the true future replacement costs is crucial for a few reasons:

Financial Preparedness: It ensures that the reserve fund—the pot of money set aside for these big repairs and replacements—is sufficient when the time comes. This way, there won't be any surprises or sudden financial burdens on the residents and/or owners.

Maintaining Property Value: Regularly updating and replacing aging components of the building not only keeps it safe and enjoyable but also helps maintain or even increase the property's value. It's about protecting and enhancing your investment in the building.

Strategic Planning: By accurately estimating future replacement costs, we can create a roadmap for when and how to tackle major projects. This strategic planning helps avoid emergency repairs that can be more costly and disruptive.

In summary, the assumption about replacement costs in our reserve study is our best effort to foresee the financial needs of your building, ensuring that it remains a safe, pleasant, and

valuable place to live for years to come. By planning ahead and saving accordingly, you can manage these future costs in a way that's manageable for everyone involved.

Appendix "D"

Repair and Maintenance Schedule Explained:

In our SIRS, we include an assumption that might seem a bit straightforward but is absolutely critical: we count on the property owner to follow a diligent and reasonable schedule for

repairing and maintaining the building. This isn't just about fixing things when they break; it's about regular, proactive care to keep everything in top shape.

Why Is This So Important?

Imagine your building like a car. Just as a car needs regular oil changes, tire rotations, and brake checks to run smoothly and avoid breakdowns, your building needs similar attention. Regular maintenance includes tasks like painting, maintaining the structure, and checking fire protection systems (as per the SIRS requirements). These activities might seem routine, but they play a huge role in preventing bigger, more costly problems down the line.

Here's why sticking to a maintenance schedule is vital:

Cost Savings: Regular upkeep helps catch and fix small issues before they become big, expensive problems. It's much cheaper to replace a few worn-out tiles or fix a small leak than to deal with water damage or structural issues from neglected maintenance.

Safety and Comfort: Well-maintained buildings are safer and more comfortable for everyone inside. Regular maintenance ensures that safety systems are functioning, amenities are usable, and the building is free from hazards.

Property Value: Buildings that are well taken care of tend to retain or even increase in value over time. Prospective buyers or tenants are more attracted to properties that are in good condition, which can be a significant advantage if the property is ever sold or leased.

Compliance with Standards: Keeping up with maintenance helps ensure that the building remains compliant with local codes and regulations, avoiding fines and legal issues.

What Does This Mean for You, the Owner?

By assuming that you'll maintain a proper repair and maintenance schedule, our SIRS calculates the funds needed for future repairs and replacements based on the expectation that the building is being well cared for. If maintenance is neglected, the actual costs could exceed our estimates, leading to financial shortfalls when big repairs or replacements are needed.

In short, regular maintenance isn't just a recommendation; it's a crucial part of keeping your building safe, pleasant, and financially sound. Our reserve study relies on this assumption not only to forecast future expenses accurately but also to ensure that the building remains a place you're proud to own and live in.

This explanation aims to convey the critical importance of regular maintenance in simple terms, emphasizing how it affects the building's safety, comfort, and financial health. It's designed to help property owners understand that their proactive efforts in maintaining the property are integral to its long-term success and stability.

Appendix "E"

Understanding the Limitations of the Reserve Study:

Our SIRS is a careful and detailed plan that helps us predict and prepare for the future costs of maintaining and repairing your building. However, like any plan that looks into the future, there are certain limitations and unknowns that we need to acknowledge:

Unknown and Hidden Conditions: Just as a doctor can't always see what's happening inside our bodies without special equipment, we can't always see the condition of every part of your building without opening up walls or digging underground. There might be issues that are hidden or not apparent during our inspections that could affect the building's needs and the associated costs.

Changes in Laws or Regulations: Laws and building codes can change, and these changes might require different or additional work in the future that we can't predict right now. For example, if new safety standards are introduced, the building might need upgrades that go beyond our current plans.

Unforeseen Economic Changes: The economy can be unpredictable. Factors like market crashes, extreme inflation, or even global events can change the cost of materials and labor in ways we can't foresee. This means the actual costs could be different from our estimates.

Why This Matters to You:

Understanding these limitations is important because it means that while our reserve study is a highly educated estimate, it's not a crystal ball. It's a living document that should be reviewed

and updated regularly to reflect any new information, changes in the economy, or legal requirements. Here's what it means for you as the owner:

Flexibility: It's wise to be flexible and prepared for adjustments in the budget or savings plan to accommodate these uncertainties.

Regular Reviews: By reviewing the condition of the building and the reserve study periodically, you can catch and address hidden issues before they become major problems.

Adaptability: Being aware of the potential for change helps you stay adaptable. If laws or economic conditions change, you'll be ready to respond and update your plans to keep the building safe and well-maintained.

In summary, while we strive to provide the most accurate and helpful reserve study possible, it's important to understand that there are factors beyond anyone's control that could affect the building's future needs. By planning for these possibilities and staying informed, you can help ensure that your property remains in top condition for years to come.