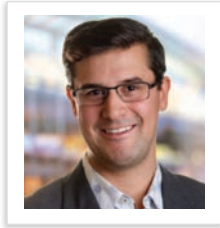


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The Cost of Deferred Maintenance – When Spending Money Makes Sense

Every day condominiums are tasked with the challenge of managing common elements to maintain the value, safety, and function of their buildings, while minimizing costs to owners. Over the past three years these challenges have become more pronounced as inflation has squeezed condominium reserve funds balances, resulting in some projects being deferred, as additional capital is raised. But what are the actual costs of deferring work?

Is it cheaper to defer the work while we build our Reserve Fund, or borrow cash and do the work now? By utilizing anonymous data from past projects within the Ontario market, we have analyzed and presented case studies, to give the reader an idea of potential cost or savings of deferring an upcoming project.

As every asset ages, its condition gradually deteriorates. The condition of these assets can be improved by maintenance, repairs or replacement. Figure 1 depicts the gradual and then steep deterioration curve an asset, in this case a



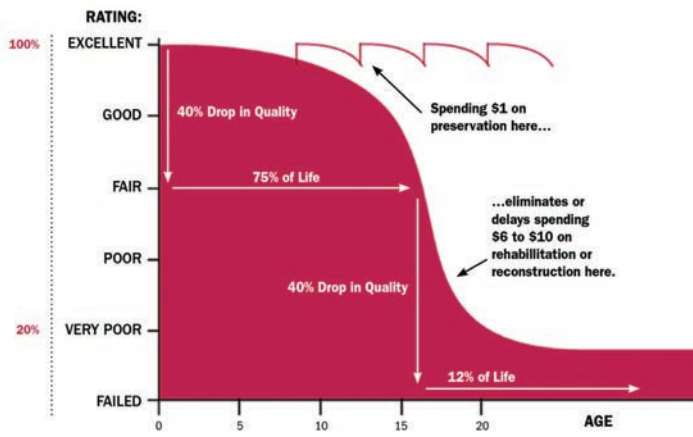


Figure 1 – Typical Asset Deterioration Curve – Roads (Canadian Infrastructure Report Card 2019)

road, typically takes over time, versus the intermittent spending on repairs required to maintain its condition. These repairs can be required for safety, to prevent leaks, or as proactive measures to prevent the asset from deteriorating further (and reaching the steep portion of the asset deterioration curve).

In order to generate comparable data for cost comparison we took over three dozen projects, normalized them to Q2 2023 pricing per the Statistics Canada building construction price index for the Greater Toronto Area, and compared them with asset replacement values from the 2023 Altus Canadian Cost Guide. We performed analysis of various project case studies to see when undertaking regular maintenance makes financial sense. The generalized asset depreciation curves for various condominium

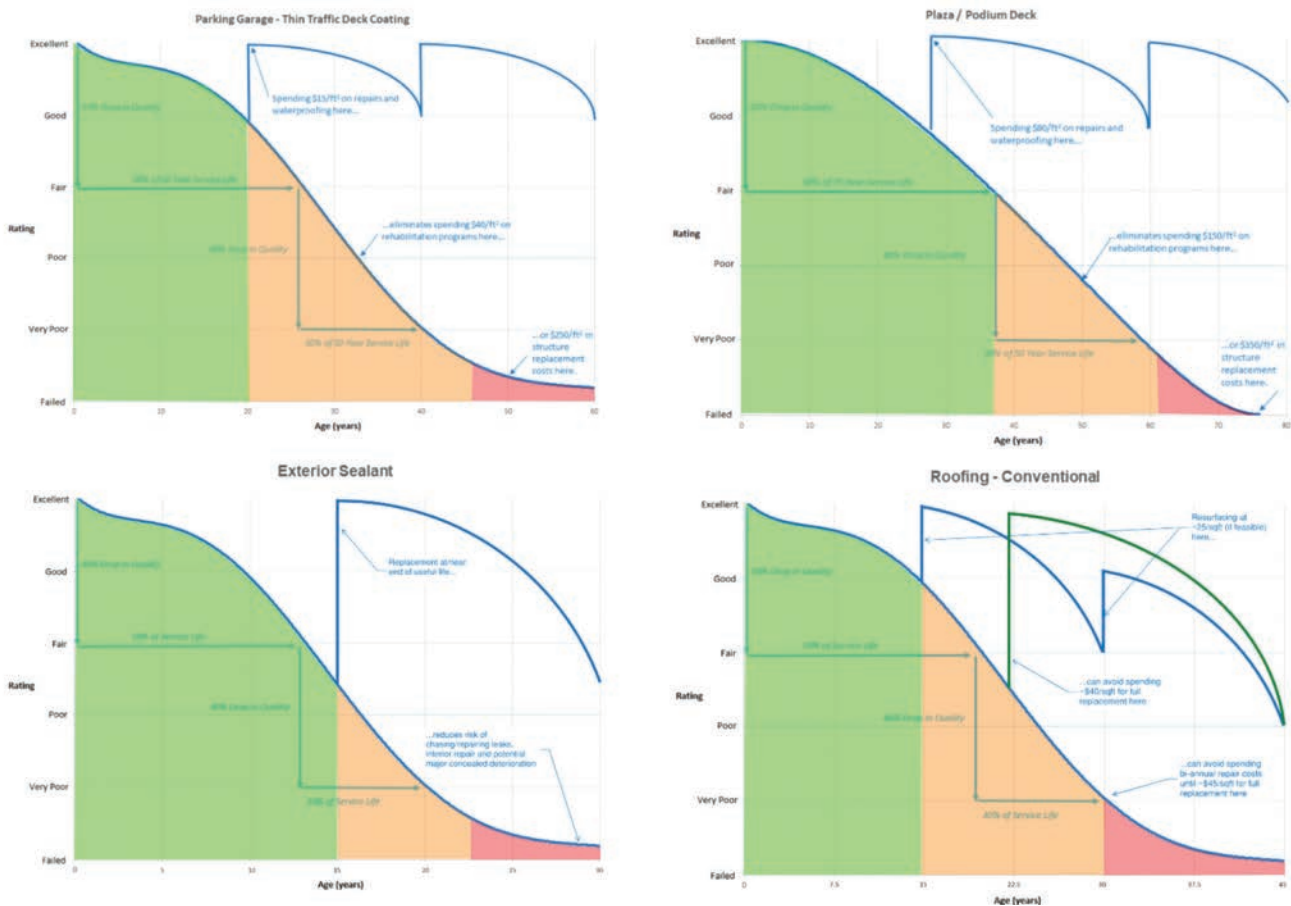


Figure 2 – Various Asset Depreciation Curves for Condo Elements

Disclaimer: Please note that this is a theoretical financial comparison only and does not highlight the other potential safety risks of deferring work, loss of asset revenue generation (if applicable), and project soft costs (i.e. permits, material testing, engineering consulting, additional project management services, etc). These projects are case studies which represent hard construction costs only (without applicable taxes). These curves do not necessarily reflect the financial situation at your condominium – speak to your professional partners and undertake condition assessments before planning your large repair projects.

building components look like Figure 2 below.

For all case studies the life cycle and costing is per the asset deterioration curves in Figure 2, the future repair costs are indexed to inflation, and year one is 2024. For parking garages and podium decks the structures are assumed to be 100,000 sq.ft. Loan terms were 20 years for larger projects, or 15 years to coincide with renewal periods, compounded annually.

Theoretical Case Study 1 - TTDC Parking Garage

Parking garages can be maintained with regular repairs to waterproofing membranes, which protect the underlying concrete structures.

Our parking garage case study considers the cost of regular thin system waterproofing maintenance (waterproofing repairs \$15/sq.ft. in year 20 and 40), major rehabilitation (concrete repairs and waterproofing repairs \$40/sq.ft. in year 35), and asset replacement (Complete replacement \$250/sq.ft. in year 50).

As shown in Figure No. 3, after completing our lifecycle analysis of comparing these options we have a clear winner – waterproofing repairs are more cost effective, even in the high interest and inflation scenarios.

Theoretical Case Study 2 - Podium/Plaza Repairs

Podium/plaza decks are waterproofed portions of below-grade structures that extend beyond the footprint of your condominium building, typically above below-grade parking garages. They feature waterproofing membranes to protect the underlying concrete structure. These components can be maintained by replacement of the waterproofing systems when they approach the end of their ser-

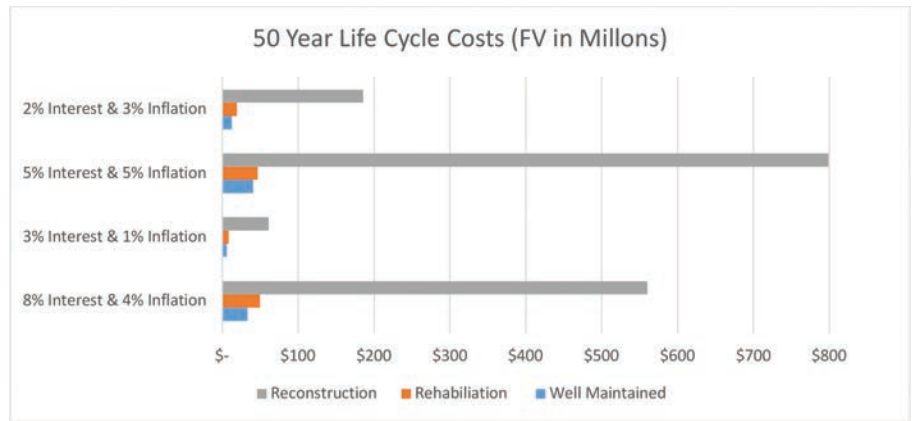


Figure 3 - TTDC Parking Garage Case Study

vice life.

Our podium deck case study considers the cost of regular maintenance (waterproofing replacement \$80/sq.ft. in years 30 and 60), major rehabilitation only (waterproofing replacement and widespread concrete repairs \$150/sq.ft. in year 50) and asset replacement (Complete replacement \$350/sq.ft. in year 75).

After completing our lifecycle analysis of comparing these options, we have a tie – timely waterproofing replacement and major rehabilitations are

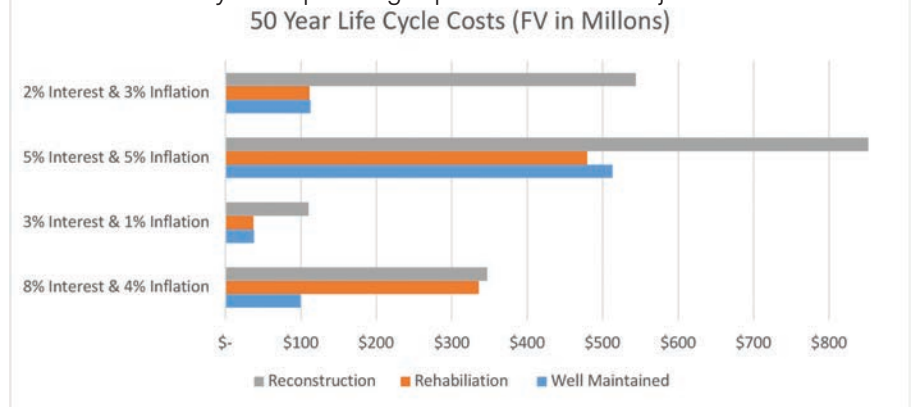


Figure 4 - Podium Deck Case Study

generally close in cost, as shown in Figure No. 4 below. However, regular waterproofing replacement is recommended to reduce risk of structural damage and hazards / liability of deteriorating concrete, and other associated soft costs.

Theoretical Case Study 3 - Exterior Joint Sealant

Joint sealants (otherwise known as caulking) are often found at the perimeter of windows, masonry joints, and other cladding joints around your condominium. They are intended to keep water out of your building, protecting the interior from moisture. Joint sealants can be maintained by replacement when they approach the end of their service life.

Our joint sealant case study considers the cost of regular replacement (replacement \$10/lin.ft. every 15 years), or repair of leaks annually and replacement (sealant replacement \$10/lin.ft. in year 25+, and leak repairs of

\$20,000 in years 15-25) over an assumed 65,000 lin.ft. of sealant on the case study building.

After completing our lifecycle analysis for this case study, it appears that regular maintenance of sealants is more cost effective as illustrated in Figure No. 5.

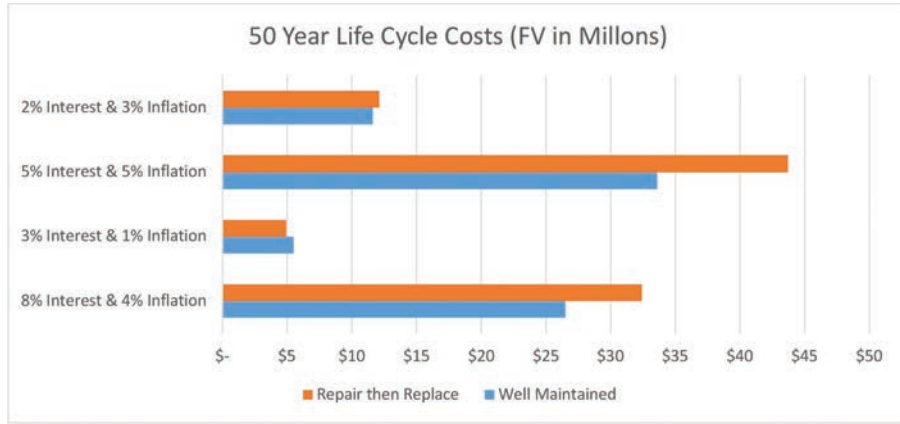


Figure 5 - Joint Sealant Case Study

Theoretical Case Study 4 - Brick Cladding

Brick masonry is a common cladding material for condominium buildings. Brick masonry can be maintained by targeted replacement when deterioration from freeze-thaw occurs.

Our brick cladding case study considers the cost of regular isolated repairs (isolated repairs \$4/sq.ft. every 15 years), major rehabilitation only (larger replacement \$9/sq.ft. every 30 years) and major rehabilitation (Widespread repairs \$56/sq.ft. in year 60) over an assumed 30,000 sq.ft. of case study building facade.

After completing our lifecycle analysis of comparing these options we have a clear winner – regular replacement is more cost effective as shown in Figure No. 6. In addition, undertaking regular repairs can allow your engineer to identify “problem areas” with masonry detailing that can be adjusted to reduce the future rate of deterioration, such as reducing brick wetting, or salt exposure.

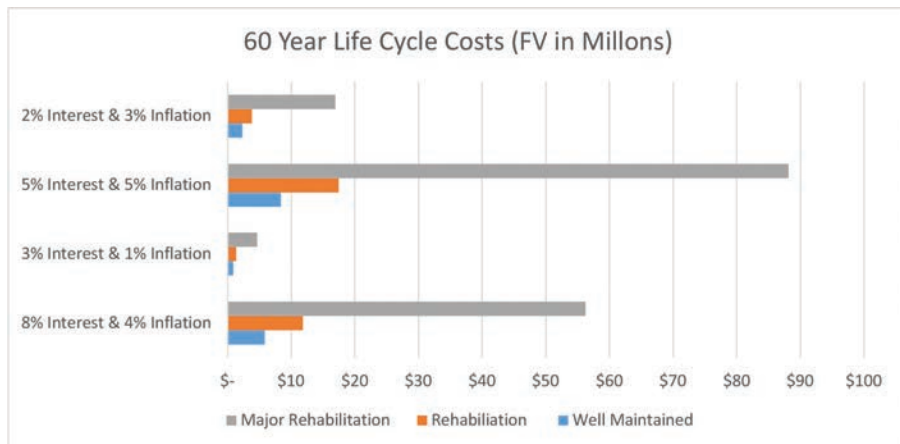


Figure 6 - Brick Masonry Case Study

Final Thoughts & Cost of Borrowing

In many of these scenarios we have seen that the cost to repair an asset regularly is more cost effective than allowing it to deteriorate and undertaking more extensive repairs in the future. These cost differences are generally consistent across various interest and inflation scenarios, as the interest rate and inflation increase project costs over time, as assets deteriorate. Undertaking detailed condition assessments in addition to reserve fund studies, and considering different repair approaches can assist condominium Boards in making sound decisions and prioritizing funds.

Every condominium will have its own financial limitations and considerations that will need to be considered by the Board of Directors as you make capital planning decisions. However, deferring capital repairs often results in higher capital costs. Maintaining assets in a state of good repair makes both economic and structural sense.

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