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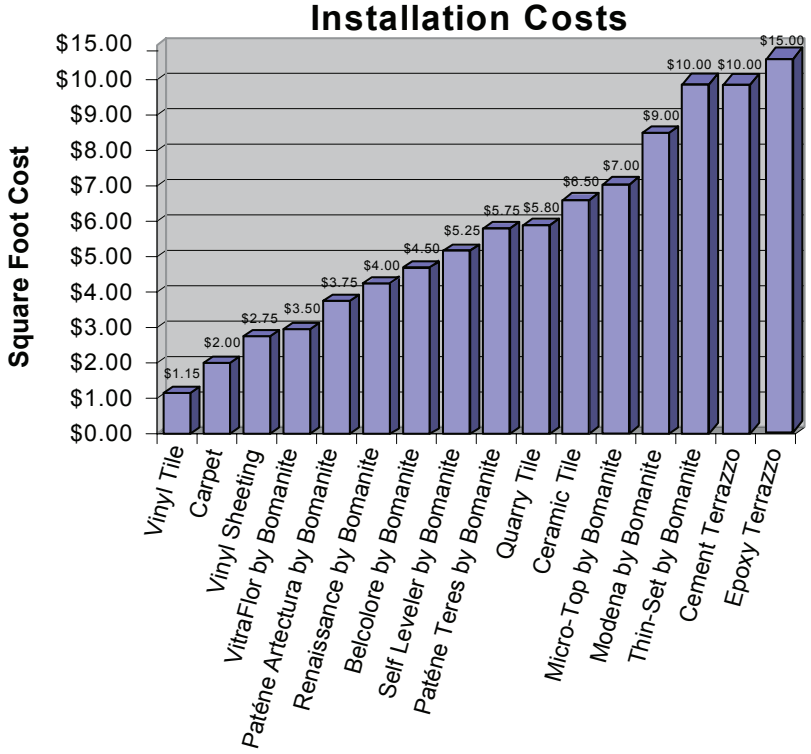
Your Single Source For Innovative
Architectural Concrete Solutions

LIFE CYCLE COST ANALYSIS
ARCHITECTURAL CONCRETE VS. OTHER FINISHES

In recent years, economic pressures have forced the construction industry to “sharpen its pencil." Owners and general contractors are challenged to reduce construction costs while maintaining high levels of quality. Architectural concrete finishes have proven to be a valuable resource. In fact, concrete provides architects and designers with creative options and solutions to these difficult constraints. Every owner wants a finish that can be installed at a reasonable price, as well as maintain low life-cycle costs.

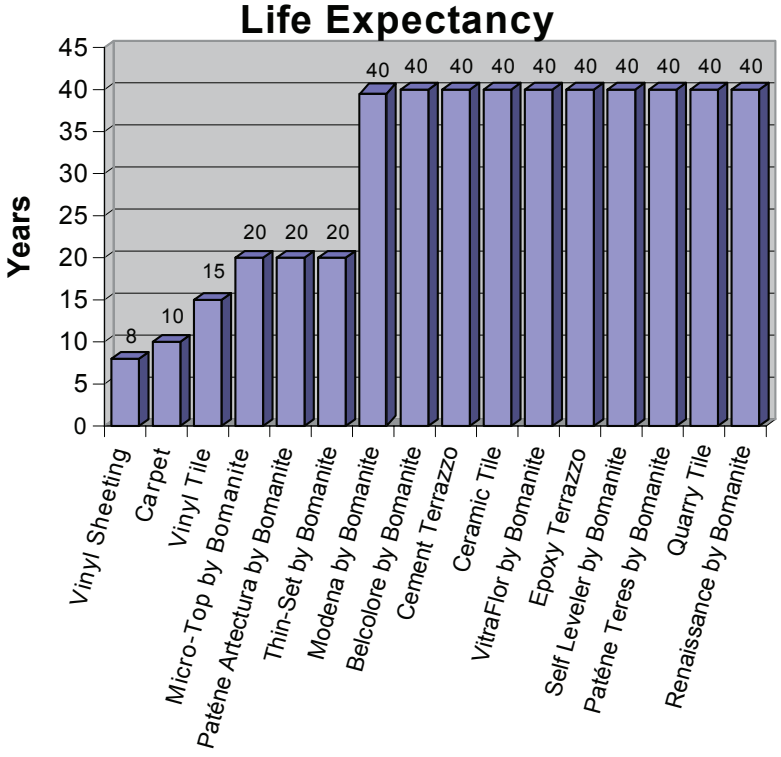
The National Terrazzo & Mosaic Association, Inc. (NTMA) has been a huge proponent of life-cycle costing. In fact, they have conducted extensive studies compiling statistics from contractors, institutions, government agencies and municipalities to determine the average cost of installing, maintaining and replacing various floor finishes used in schools, hospitals, retail and municipalities. Unfortunately, their studies did not include architectural concrete finishes. However, this document combines the valuable research of the NTMA with a similar life-cycle costing study conducted by The Bomanite Company, providing a comprehensive analysis that includes architectural concrete.

Installation Costs
Installation costs for these studies where based on projects of similar size and design complexity. The average project size was 10,000 square feet. Following is a table that outlines initial costs per square foot.



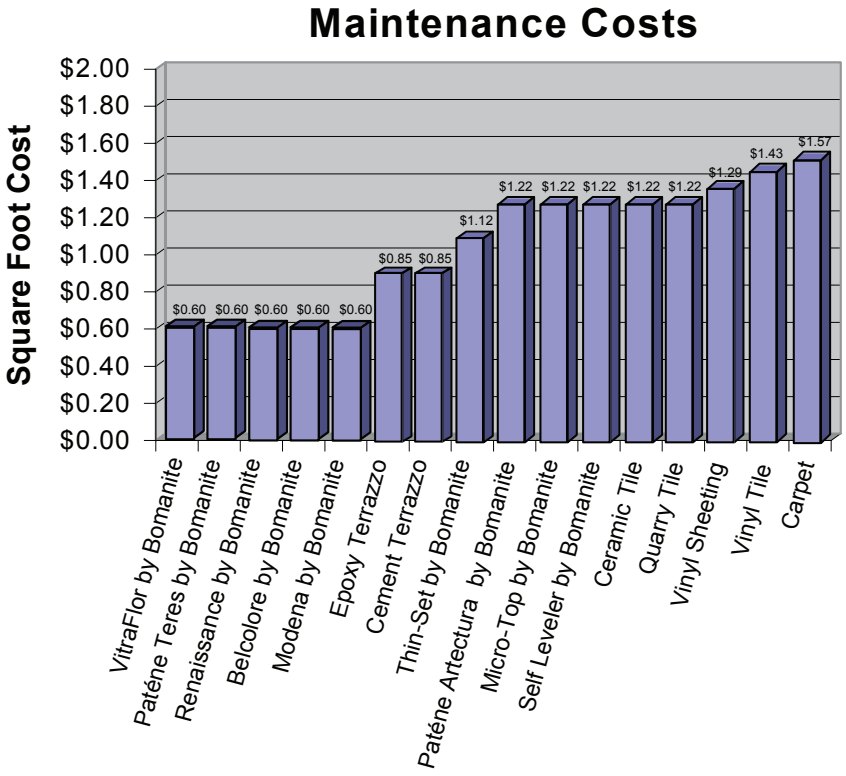
Life Expectancy

The life expectancy of these various finishes was determined from both actual statistical data and from manufacturer specifications. Some of these products have not been available in the market long enough to effectively determine their true life expectancy. In those cases, reasonable best effort was made to project a conservative result. Life expectancy was rounded to the nearest year.



Maintenance Costs

The maintenance costs for each floor finish were the most difficult factors to quantify. In the projects that were studied, each finish was maintained according to strict manufacturer's guidelines. Factors that influenced maintenance costs included, but were not limited to, materials, labor, seam/joint cleaning, patching, equipment wear and tear, and employee perceived maintenance difficulty. For example, quarry tile has a hard finish that is easy to clean. However, the grout requires care and sanitation from microbial growth. Maintenance costs reflect an annual cost per square foot.

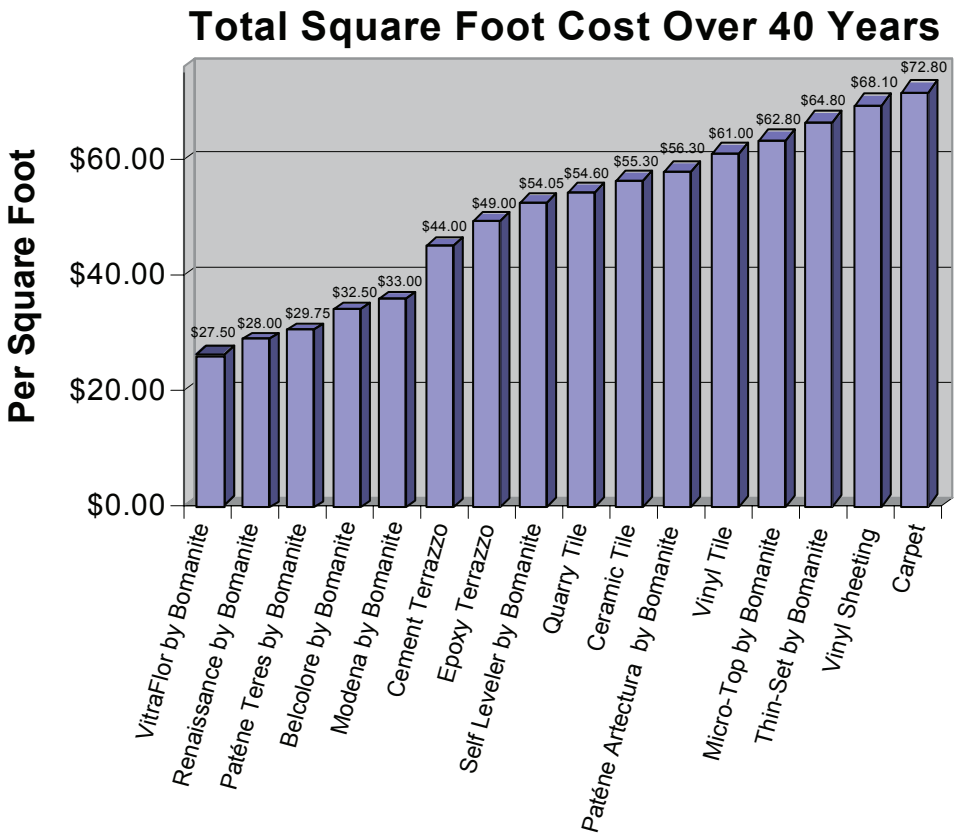


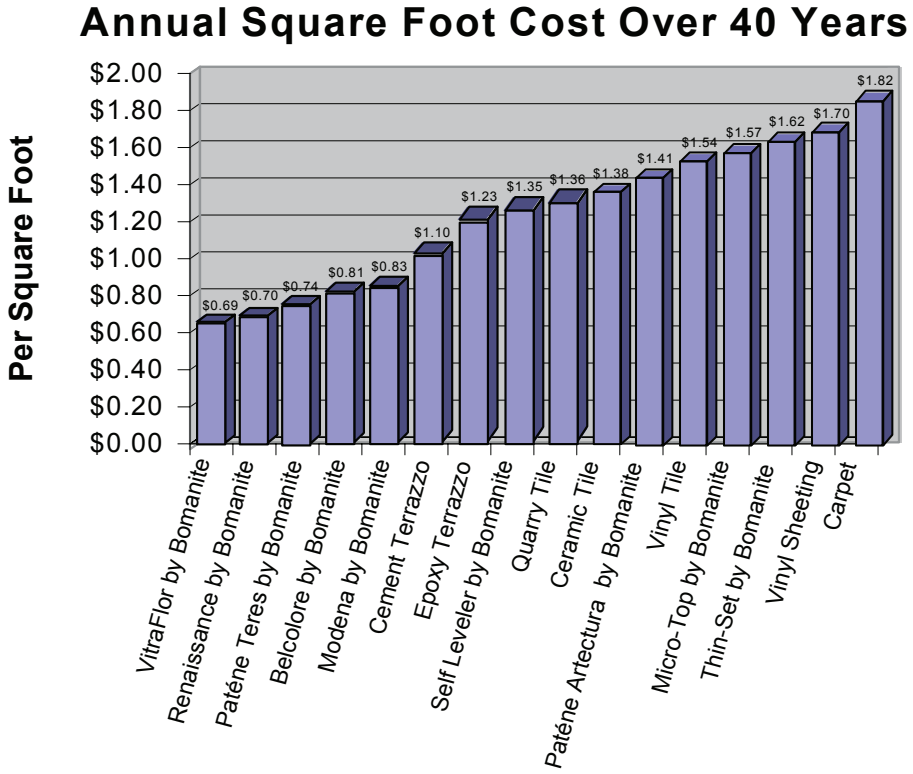
Replacement Value

The replacement value typically is a combination of actual replacement cost plus inflation and loss of sales during down time of construction. The loss of sales variable impacts certain industries more that others. For this study, it was assumed that each finish could be replaced without loss of sales and with no inflation. In reality, this is a false assumption. This assumption will show less in the favor of finishes with high-life expectancy. Replacement value will be shown as the original installation cost.

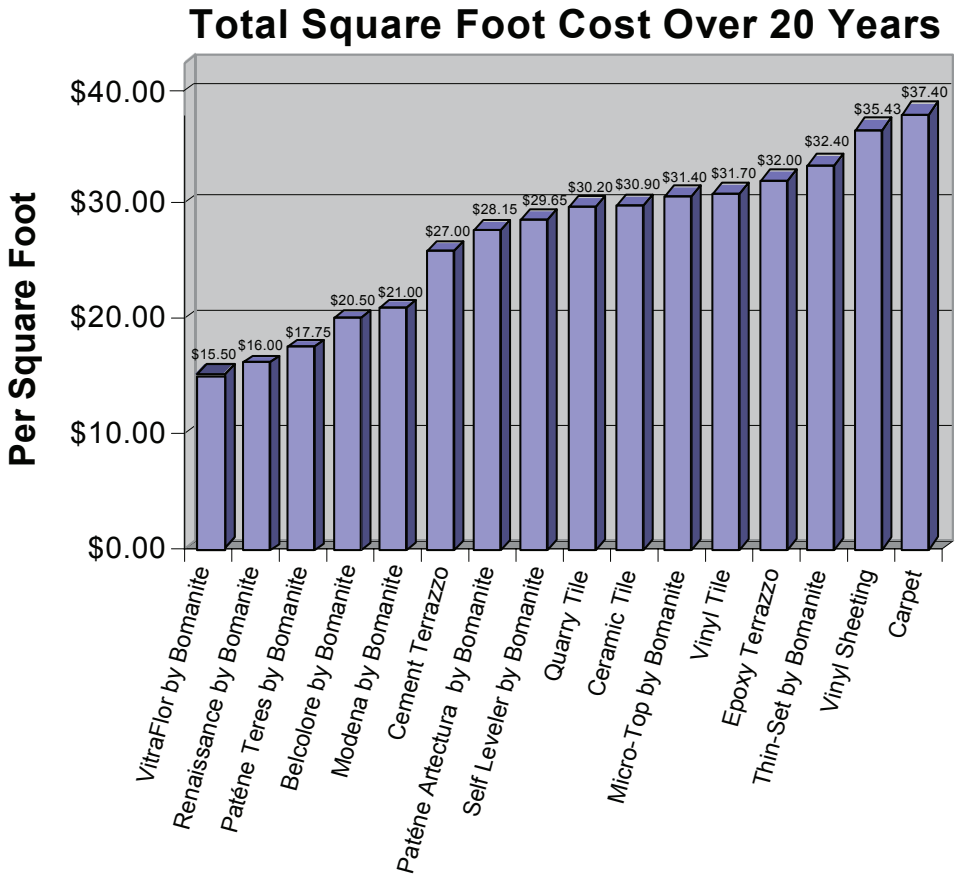
Final Analysis

The final conclusion of this analysis is formulated by looking at the installation, maintenance, and replacement costs over the full-life expectancy of the most durable product. In this analysis, 40 years represents the full life expectancy threshold. The final figures are reported first as total cost per square foot and then as a 40-year cost annualized.





The statistical data in this analysis was derived from a wide range of projects from many cities across the United States. From this data, an owner can determine whether or not a particular finish meets their needs. Take care not to mistake low square foot cost over a forty-year period to be the most effective finish. In many cases, owners prefer designs that can be altered as market trends shift. For example, retail owners may intentionally design projects with a seven-to-ten year design expectancy. In these situations, Life Cycle Cost Analysis will change significantly. Replacement costs become a non-factor and the impact of maintenance is much less. Below is a graph of a Life Cycle Cost Analysis using a twenty-year life expectancy threshold.


Total Square Foot Cost Over 20 Years
Per Square Foot
$40.00
$30.00
$20.00
$10.00
$0.00
$15.50
$16.00
$17.75
$20.50
$21.00
$27.00
$28.15
$29.65
$30.20
$30.90
$31.40
$31.70
$32.00
$32.40
$35.43
$37.40
VitraFlor by Bomanite
Renaissance by Bomanite
Paténe Teres by Bomanite
Belcolore by Bomanite
Modena by Bomanite
Cement Terrazzo
Paténe Artectura by Bomanite
Self Leveler by Bomanite
Quarry Tile
Ceramic Tile
Micro-Top by Bomanite
Vinyl Tile
Epoxy Terrazzo
Thin-Set by Bomanite
Vinyl Sheeting
Carpet

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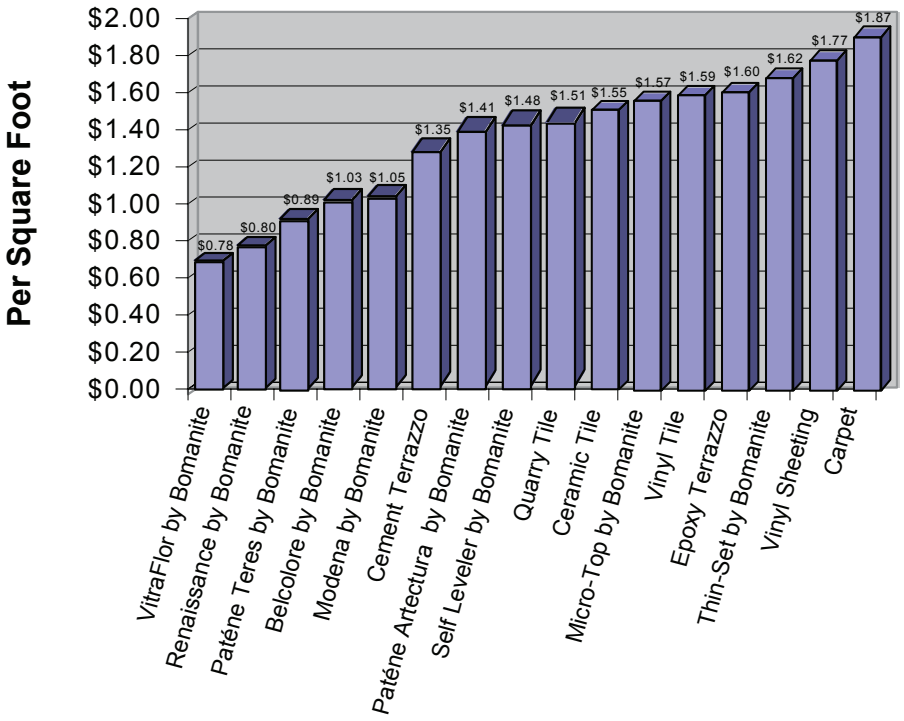
Annual Square Foot Cost Over 20 Years



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