



Budgeting and Asset Management

Learning Objectives



- **15 minutes: How And When To Budget For Roof Repairs**
- **15 minutes: How And When To Budget For Maintenance And Replacements**
- **15 minutes: Using Roof Maintenance Programs And Technology In Roof Asset Management Programs (RAMP)**
- **15 minutes: Application and seeing results**

Re-Roof Budget Planning

1) Inventory Roof

- Type of Roof: Built-Up (BUR), Modified, TPO, Tile
- Blistering
- Crazing/ Cracking
- Flashing Disorientated

2) Existing Roof Conditions

- Existing Slope to Drain
- A/C Units on Roof
- Warranty
- Amount of Base Flashing
- Cut Up Roof/ Many Sections
- Height of Building
- Coping Cap
- Gutters and Downspouts
- Test Cuts: Insulation, Lt. Wt. Concrete
- Type of Deck: Metal, Concrete , Wood , Tectum, Gypsum
- Cool Roofing
- Roofers Scope of Work
- Manufacturer's Guide Specifications

Repair or Replace?

KEY QUESTIONS

1. Service History - Annual Expenses And Locations Of Leaks
2. Maintenance History
3. Investment Horizon And Ownership Needs
4. Roof Condition
5. How Is The Roof Condition Affecting Business Operations?
6. Roof Type

ANCILLARY NON-KEY FACTORS

1. Roof Age
2. Warranty

ANSWERS

1. The Roof Can Be Maintained Using A PM Plan
 - a. Develop a preventative maintenance plan
2. The Roof Must Be Repaired To Be Returned To A Maintainable State
 - a. Develop a repair budget and execution plan
 - b. How long will the repair last with PM and without
3. If Not Can The Roof Be Rehabilitated With Coatings
 - a. Budget
 - b. Warrantable and Lifespan
4. If Not What Is The Best Choice For A Replacement Specification
 - a. Budget



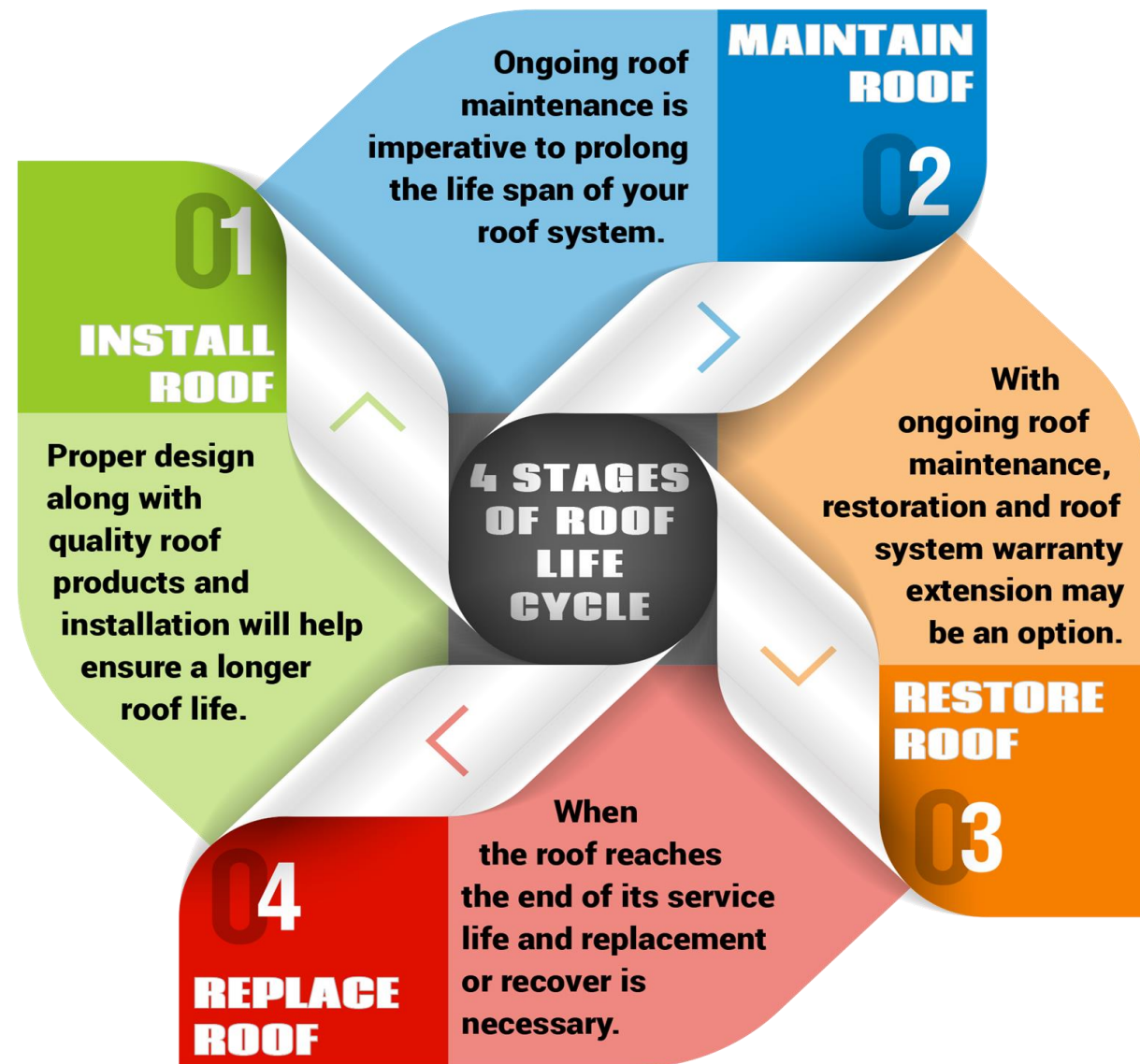
Life Cycle Cost of Ownership Analysis

KEY INPUTS

- Initial Costs
- Life Expectancy (**NOT** Warranty Term!)
- Maintenance Costs
- Energy Savings
- Disposal Costs

Did You Know

- 80% Of All Roofs Fail Prematurely Due To Lack Of Maintenance And Poor Craftsmanship Upon Installation
- Unplanned Repairs And Reactive Maintenance Expenses Are On Average 3 To 5 Times The Cost Of Planned Maintenance
- Proactively Maintained Roof Systems Last An Average Of 21 Years Compared To 13 Years For Reactively Maintained Roof Systems *Source:Buildings Media, Buildings.Com
- Roof Replacement Is Often The Single Most Expensive Building Expense Post Construction That A Owner Will Incur



Budgeting for Maintenance...And

REACTIVE MAINTENANCE

- Reactive work performed on “critical defects”
- Problems that present an immediate threat of water intrusion into the building interior

PROACTIVE MAINTENANCE

- Managing the roof as an “asset”
- Proactively performing work on an existing roof system

Unplanned Repairs are Costly

US Air Force Multi-year maintenance study
600 million sf

- Reactive Maintenance >\$0.15per ft²/year
- Proactive Maintenance \$0.04 per ft²/year

100,000 sq. ft. roof

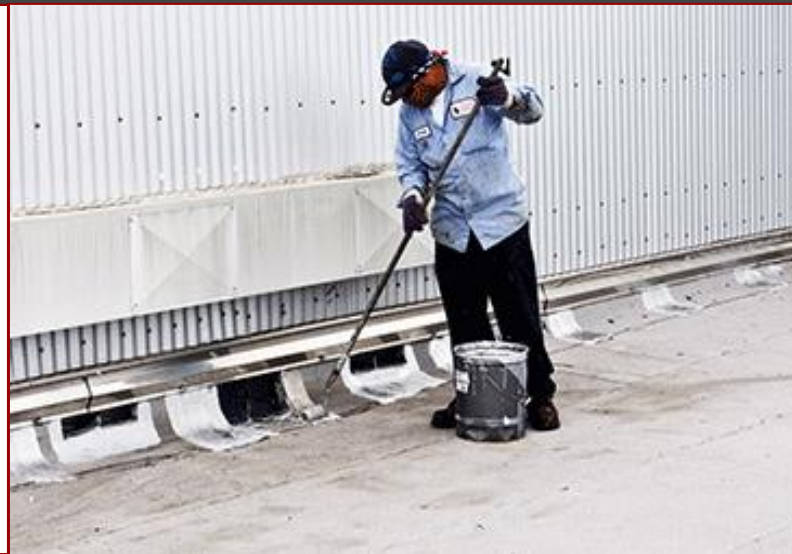
Reactive – \$15,000

Proactive – \$4,000



MANUFACTURER LANGUAGE IN NDL WARRANTIES

NDL Warranties
DO NOT
Cover Maintenance



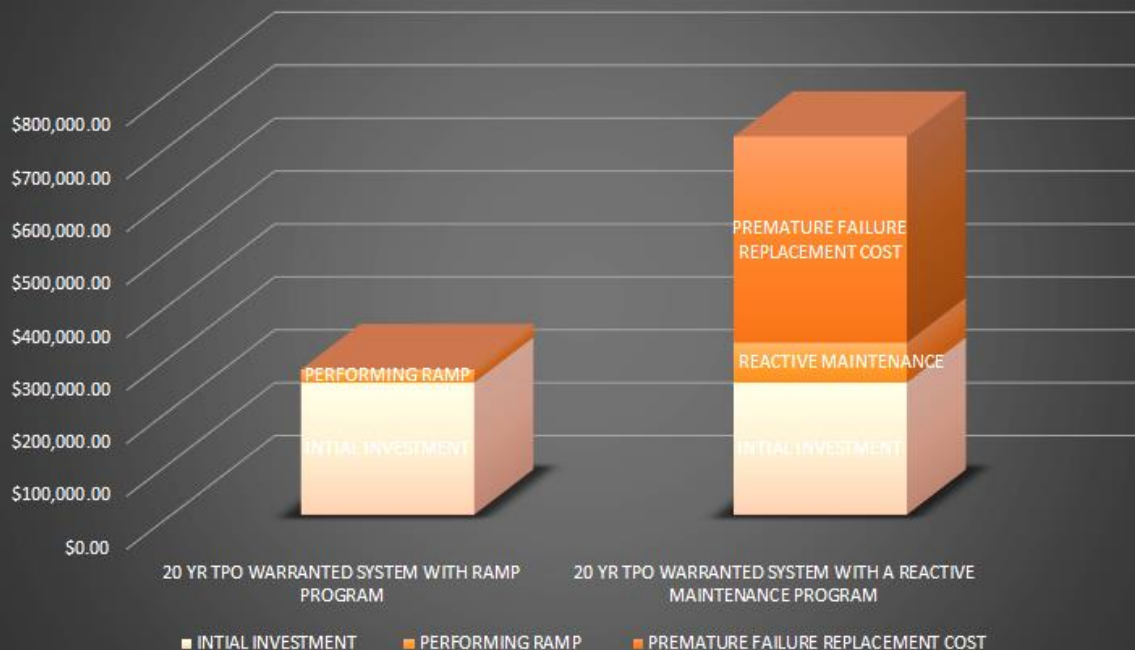
Maintenance is Require
“You must perform regular inspections and maintenance and keep record of this work”

...The Cost Of Not Budgeting For Maintenance!

RAMP vs REACTIVE MAINTENANCE STRATEGIES

- 25,000 SF ROOF
- \$10.00 SF INSTALLED COST
- \$.04/SF RAMP - \$0.15 REACTIVE
- 25 YR LIFE EXPECTANCY RAMP - 15 YR LIFE EXPECTANCY REACTIVE
- NO REACTIVE MAINTENANCE FOR 5 YEARS OF LIFE
- 3% INFLATION RATE ON REPLACEMENT COST AT FAILURE

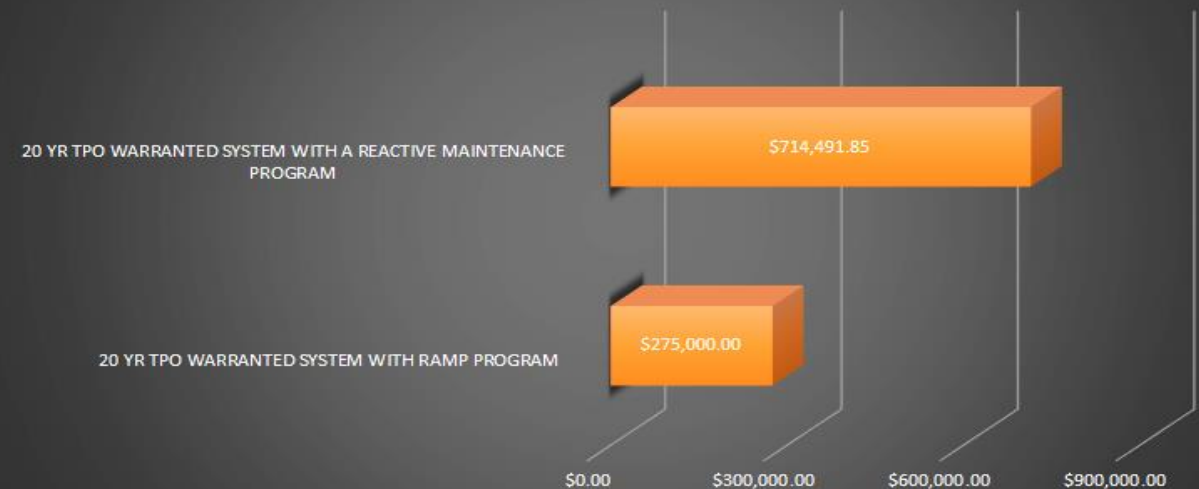
COMPARISON OF RAMP VS REACTIVE BUDGETING STRATEGIES



YEARLY AVERAGE COST OF OWNERSHIP



25 YR COST OF OWNERSHIP



What Lies Beyond The Initial Investment...

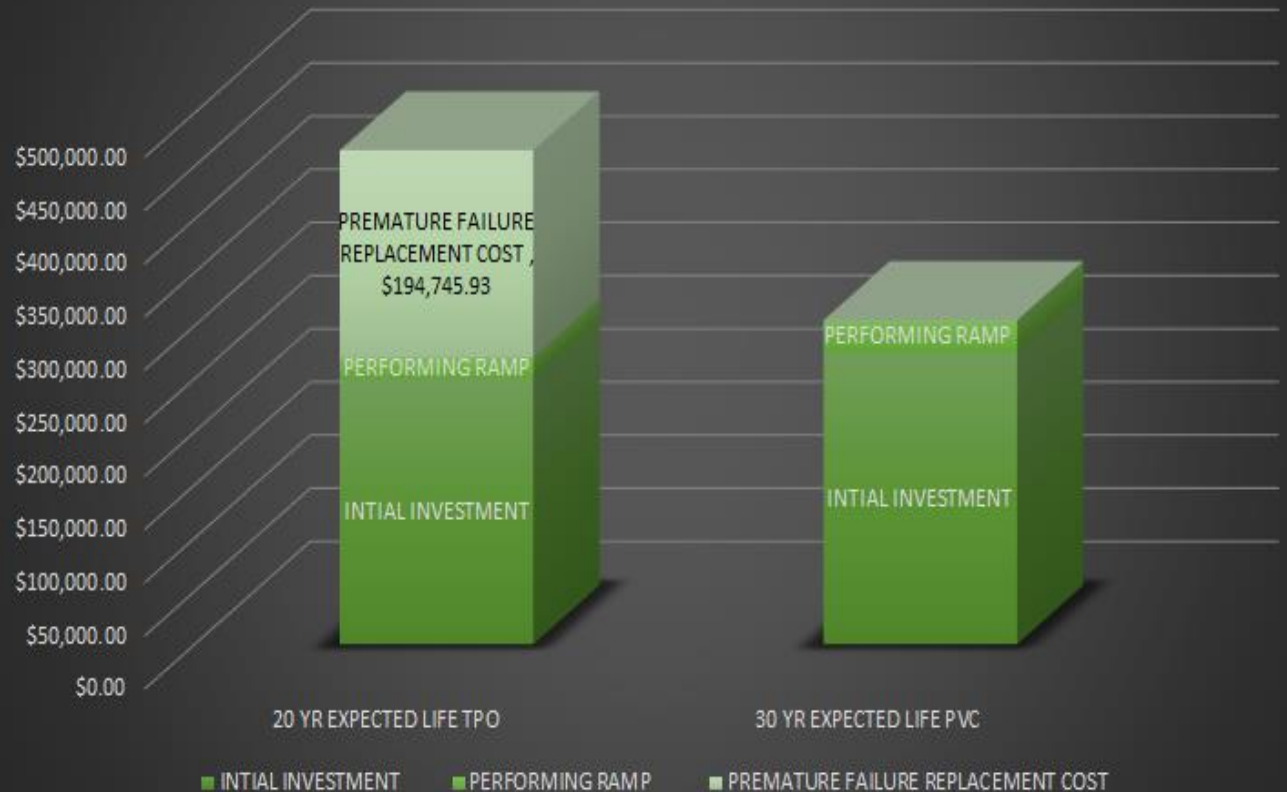
20 YR TPO LIFE EXPECTANCY VS 30 YR PVC LIFE EXPECTANCY

- 25,000 SF ROOF
- \$10.00 SF INSTALLED COST 20 YR - \$11.00 SF INSTALLED 30 YR
- \$.04/SF RAMP BOTH SCENARIOS
- 20 YR LIFE TPO - 30 YR LIFE EXPECTANCY TPO
- 3% INFLATION RATE ON REPLACEMENT COST AT FAILURE
- REPLACEMENT COST OF TPO LEVELIZED FOR 30 YR TERM

YEARLY AVERAGE COST OF OWNERSHIP



INITIAL INVESTMENT COMPARISON 20YR VS 30 YR LIFE EXPECTANCY



Commercial Re-Roof Budget Planning Cheat Sheet



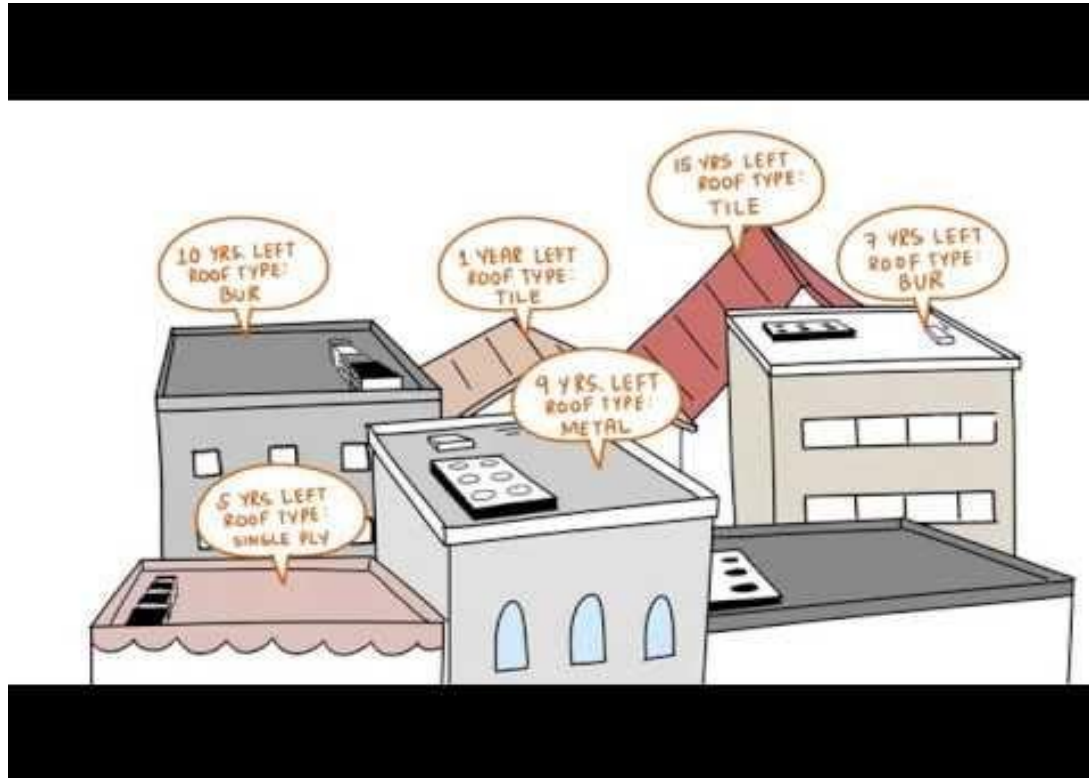
Commercial Re-Roofing costs vary depending on the height, size, access and existing conditions of the current roof system.

Commercial Roofing Solution	Investment
Roof Repairs	\$170.00 per hour
Roof Coatings & Restoration	\$5.00 - \$8.00 per sq.ft
Retrofit – ReCover	\$6.00 - \$12.00 per sq.ft
Complete Tear Off Re-Roof Low- Rise (2-4 stories)	\$12.00 - \$20.00 per sq.ft
Complete Tear Off Re-Roof Mid-Rise (4-8 stories)	\$16.00 - \$23.00 per sq.ft
Complete Tear Off High-Rise (10+ stories)	\$23.00 - \$33.00 per sq.ft
Tapered Insulation	Add \$8.00 per sq.ft
HVAC, Mechanical & Electrical Upgrades	Varies in Price
Lightning Protection System	Depends on Size
Stucco Wall Waterproofing	\$5.00 to \$8.00 per sq.ft

Roof Management Programs

- **The Most Important Tool A Building Owner/Property Manager Has To Protect Their Roof Asset Is Information.**
- **Establish A Cloud Based Roof Asset Management Portal That Allows You To Have Vital Information Accessible From Any Internet Ready Device.**
 - ✓ **Inspections**
 - ✓ **Budget Reports**
 - ✓ **Service Repair History**
 - ✓ **Warranties**

Roof Management Programs



Site Inspection Reports

Digital Reports Of Your Roof Asset

Live Inspection Reports Updated When Service Work Is Performed

Benefits

- Observations** Service Tickets, Warranties, Invoices And Repair Documentation Are Stored For Future Analysis
- Current Condition** Current Status And Expected Useful Life
- Recommendations** Suggestions Based On Collected Data

Budgeting



A **Budget Matrix** Feature Provides You With A Live Budgeting Tool For Your Roofing Needs

You Have All The Information At Hand!

- **Able To Be Proactive In Managing Your Asset**
- **Ensure Your Roof Has The Maximum Service Life**
- **Access To Custom Reporting To Budget For Future Repairs and CAPEX Projects**
 - **Remedial Repairs**
 - **Emergency Repairs**
 - **Re-roofing Budget**
 - **Coating Budget**

Budget