



Overview

- Western's history, safety rating and services
- Building Construction by era
- Common deficiencies and useful life
- Proactive versus reactive maintenance
- \cdot Case study
- Keys to a successful restoration project
- Questions





1890-1920 Construction Solid Masonry/Load Bearing Walls





1890-1920 Repairs

- 5 Years
 - Building cleaning and sealing
- 10 Years
 - Chemical Injection
- 20-25 Years
 - Tuckpointing masonry
 - Masonry Restoration
 - Structural pinning
 - Replicas FRP and GFRC





1920-1970 Construction Introduction of Steel





1920-1970 Construction Terra Cotta





1920-1970 Repairs

- 5 Years
 - Building cleaning and sealing
- 10 Years
 - Chemical Injection (not for terra cotta)
- 20-25 Years
 - Tuckpointing masonry
 - Masonry Restoration
 - Structural/epoxy pinning
 - Replicas FRP and GFRC





1970- Present Construction Curtain Walls





Curtain Wall Repairs

- 5 10 Years
 - Urethane Sealant Replacement
- 15-20 Years
 - Silicone Sealant Replacement
 - Wet seal / wet glaze





1970- Present Construction Veneer Wall System





Veneer Wall System Repairs

- 5-10 Years
 - Building cleaning and sealing
 - Urethane Sealant Replacement
- 20-25 Years
 - Tuckpointing masonry
 - Masonry Restoration
 - Structural steel and pinning
 - Flashing Systems lintels and shelf angles





1970- Present Construction Pre-Cast





Pre-Cast Repairs

- 5-10 Years
 - Building cleaning and sealing
 - Urethane sealant replacement
- 15-20 Years
 - Silicone sealant replacement
- 20-25 Years
 - Structural steel and pinning
 - Support steel replacement





Common Repairs



Sealant Failure

- Aged caulk:
 - Shrinks and checks
 - Adhesive or cohesive failures
 - Returns to its natural state (liquid)





Sealant Failures

Adhesive Failure



Cohesive Failure







Sealant Repairs

• Surface preparation

- Remove old caulk
- Area cleaned and dried
- Backer rod installation
- Install sealant per <u>manufacturer's</u> <u>specifications</u>



Correct Joint Design





Wet Seal Glaze - Failures

- As window systems age, the gaskets shrink and deteriorate
- Overtime, these gaskets will need to be removed and new sealant installed
- Failure of these systems may result in water intrusion in the form of leaks and sometimes condensation





Wet Seal/Wet Glaze

- Application of sealant from glass to metal
 - Typically over a gasket





Urethane "vs" Silicone Sealant

- Urethane Sealant
 - 5-10 year life
 - Can be coated and/or painted
- Silicone Sealant
 - 15-20 year life
 - Cannot be coated and/or painted





Grinding/Tuckpointing





Installation of Masonry Control Joints







Steel Shelf/Lintel Replacement





Installation of Veneer Wall Flashing System







Cleaning & Water Repellants

- Deep penetration
- High vapor transmission
- Invisible
- Service life 5 to 10 years







In-house Preventative Measures

- Eliminate problems before they become hazardous and costly
 - Regular Inspections
 - Complete preventative maintenance
 - Short term repair plan
 - Long term repair plan





How a Quality Contractor Can Help

- Building and garage condition survey
- Repair prioritization and cost analysis
- Phasing
- Budget and estimating
- Maintenance program implementation
- Training (lunch n learn)





Polsky Terra Cotta- Demolition





Polsky Terra Cotta- Construction





Polsky Terra Cotta- Completed





Polsky Terra Cotta- Completed





Keys to a Successful Restoration Project

- Perform investigations /mock-ups
- Develop budget/scope of work
- Interview potential contractors
- Check job references/visit recent projects
- Ask for contractor's safety & quality control program
- Request information on bonding & financial statements







