



# Building Restoration

The Art  
and Science  
of Restoration





# Sustainable Preservation

**Architecture is an expression of our values.** Preserving architecture through building restoration is a sustainable, responsible use of resources. What is sustainable building if not preserving what we have already built?

## An Unconventional Look at Building Restoration

### Restoration: What does it really mean?

Building restoration can be defined as the act of preserving assets, returning them to their former position or an improved condition.

### Why is restoration important?

#### Restoration is a legacy we leave to the next generation

Architecture embodies our heritage. Our buildings are a reflection of our values. As you tour the great cities of the world, you can read the story of these cities in their skylines... a rich story worth preserving. Through restoration, we preserve our link to the past.

#### Restoration is about vitality and renewal

Restoration preserves our history, our culture and our progress. If we allow our buildings to fall to corrosion, deterioration and disrepair, we erode the fabric of our neighborhoods and communities. Building restoration has the power to transform. It can heal and revive, strengthening the social structure of our communities.

### Restoration is about craftsmanship

It requires thoughtful planning, skill, knowledge and ability. But it also takes passion and appreciation for the legacy we leave for the future; a perspective that includes the important relationship between buildings, their inhabitants and the environment.

### Restoration is responsible and sustainable stewardship of our resources

The urgency for sustainability and preservation of our natural resources grows daily. What can be more sustainable than restoring an existing building? When a building is restored we keep waste out of landfills and make responsible use of existing resources. By restoring rather than demolishing, we leave the built environment better than we found it, using our resources wisely for today's needs while being mindful of the needs of future generations.

Restoration utilizes existing infrastructure. It preserves the equity invested in buildings such as embodied energy, labor, money and emotion. It presents us with the opportunity to make an important and significant impact on the built world that enhances the quality of life.

*44,000 commercial buildings are demolished annually in the United States.*

*– US Census Bureau, 2009*

*Building related construction and debris totals approximately 160 million tons per year.*

*– US Department of Commerce 2009*





# Better Solutions



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**It's time to find a better way...**one that avoids demolishing repairable structures, filling landfills with construction debris, and destroying the character of our cities. The search for better solutions begins with asking the right questions.

### **The Challenges of Restoration**

Restoration is vital to the future of our cities, but the industry faces many challenges. Restoration efforts are often “too little too late.” Problems are ignored or repairs are minimal—treating the symptoms rather than the cause. Job site variations, non-standard design and fast track construction schedules can compromise long lasting repairs.

Many repairs do not last because of lack of knowledge about the root causes of the problems, material chemistry and interaction, misdiagnosis or inexperience. The complexity and volume of information can be daunting—design professionals and contractors cannot know it all.

### **The Better Solution: A Holistic Approach and a Comprehensive Strategy**

It's a simple premise: look at the entire picture, past, present and future. For the building envelope to function properly and be sustainable, it is critical that all conditions are examined and all questions answered. Every project requires a unique set of solutions. Successful repair combines knowledge and experience with a comprehensive strategy that dovetails with the right compatible products and the most effective methods.

### **Knowledge is the Key to Long Term Solutions**

Material science is rapidly evolving, with constant technological advancements as well as changes to meet new regulations and performance requirements. Knowledge is essential in order to make informed decisions and formulate the most effective restoration strategies. To be successful, you need a knowledgeable team.

Master Builders Solutions restoration specialists join with design professionals and contractors to solve problems by bringing knowledge, experience and insight to the task. They are able to understand the relationship between various chemistries, how they relate to one another and how they function together in the building envelope. A partnership of knowledge can be a powerfully effective tool.



# Within Reach

The scope is wide: wherever we live, work, play and learn, restoration enhances quality of life. It restores vitality to downtowns, breathes new life into neighborhoods and stimulates the economy. Return on investment in building restoration is considerable and far-reaching. At Master Builders Solutions we provide solutions for every challenge in every arena.



## Sustainable Restorations Require a Long-term Vision

Conditions for building type, building use and geography vary, but one thing remains the same: the need for long-lasting repairs.

At Master Builders Solutions, our approach begins by understanding the long term objectives. With our broad product offering and wide range of chemistries, we are able to think and act in ways that others cannot, always reaching for the strongest solutions... because we can.

We have been partnering with owners, design professionals and contractors across North America for over 100 years solving problems on every type of building, in every market and in every condition, from historic to new.

### The Benefits of Restoration are Everywhere

- Condominiums
- High-rise Office Buildings
- Hotel and Resorts
- Retail
- Healthcare
- Colleges and Universities
- Schools
- Government Buildings
- Historic Preservation
- Landmarks

## Far-Reaching Benefits

- The performance of the structure is enhanced with improved resistance to the elements.
- Thermal efficiency is enhanced with improved protection against water infiltration, a prime contributor to diminished R-values.
- Better seals prevent the passage of air and moisture, improving interior comfort, energy efficiency and preventing deterioration.
- Successful restoration enhances aesthetics.
- The return on investment is considerable: financial, environmental and emotional.
- The restored building becomes an attractive asset to the community, increasing in value and desirability.
- Safety is improved with the structural integrity of the building and facade.
- Buildings last longer, contributing to sustainability and quality of life.



#### **Wheaton Center | Wheaton, IL**

**Problem:** Years of chloride ingress and freeze thaw degradation resulted in deterioration that prompted numerous surface repairs. Many of these repairs failed, exacerbating the original problems.

**Solution:** Master Builders Solutions sealants, repair mortars, corrosion protection and waterproofing systems were used to address the significant deficiencies while returning the building to its original aesthetic.

#### **Montgomery Plaza | Fort Worth, TX**

**Problem:** Built in 1928, the eight story structure withstood flood and tornado damage to secure its place as a local historic icon. After years of sitting empty, the graceful exterior had degenerated into a leaking hulk.

**Solution:** Master Builders Solutions sealants, water repellents and waterproofing products were chosen for their proven performance, material compatibility and local sales support and service.

#### **Towers Condominium | Venice, FL**

**Problem:** Built in 1968, the seven story structure suffered from a long list of maladies, from waterproofing problems to structural deficiencies.

**Solution:** Master Builders Solutions' range of repair solutions allowed the contractor flexibility in approaching the building's unique repair challenges. Repair mortars, sealants, adhesives, corrosion inhibitors and waterproofing systems were used to create the necessary structural repairs while improving appearance and providing long term protection.



# High Performance Product Solutions

Lasting restoration depends upon customized solutions that address the root cause and utilize compatible products.

At Master Builders Solutions we are expert at helping solve the complexities of building restoration with proven products that meet the specific challenges design professionals and contractors face on every project.



## Compatible High Performance Product Solutions

Solutions that stand the test of time: Master Builders Solutions brand encompasses a line of proven products that addresses repair challenges and provides time-tested solutions for every aspect of building restoration—from the foundation to exposed balconies, from concrete repair, waterproofing, corrosion mitigation, and moisture protection to aesthetics.

## Joint Sealants

Building restoration is a demanding science requiring materials that bond to a variety of substrates and in diverse conditions to provide long lasting, weatherproof seals. MasterSeal® sealants are formulated with high-performance elastomers to ensure outstanding weatherproofing and protection against extreme elements. From hybrid to urethane to silicone, there is a MasterSeal sealant for every project.

## Concrete Repair

Long-lasting repair requires a sound strategy and the use of high-performance products. MasterEmaco® repair materials provide comprehensive answers to the complex challenges of building restoration. Ranging from primers and bonding agents to engineered repair mortars, MasterEmaco materials are formulated to provide sustainable repairs that restore long-term integrity and strength to buildings and facades.

*Early intervention is required to achieve cost-effective extension of the life of existing structures.*

— ConRepNet Network Newsletter 1&2, 2003



### Waterproofing

Moisture penetration is one of the most critical challenges facing buildings today. Interior or exterior, above grade or below grade, unprotected buildings suffer from water-induced damage. Deterioration and corrosion are caused by alkalis, salts, acids and mold. MasterSeal's liquid-applied high performance membranes offer long-lasting protection against the most damaging conditions.

### Wall Coatings

Keeping surfaces beautiful and walls dry requires protection more powerful than the elements. Our line of MasterProtect® high build coatings include smooth, textured or elastomeric coatings that protect against moisture, carbonation or crack bridging. Master Builders Solutions high-build coatings combine waterproofing with improved aesthetics to enhance the value of buildings and provide long term protection.

### Water Repellents

Although brick, masonry and concrete surfaces provide character to a building, they require effective protection from the damages of wind-driven rain, freeze-thaw cycles, and chloride ion intrusion. MasterProtect patented silane water repellents maintain the original appearance of the substrate and allow moisture vapor to escape, while sealing and protecting the concrete and masonry for years to come.

### Corrosion Mitigation

Steel reinforced concrete is an integral part of building structures. Unfortunately corrosion often compromises the integrity of many structures. MasterProtect advanced corrosion control solutions are formulated to inhibit corrosion, extending the service life of buildings and enhancing safety. The compatibility of MasterEmaco concrete repair and MasterProtect corrosion control materials provide assurance of long-lasting performance.

### Balcony and Traffic Coatings

Balconies and parking garages represent some of the toughest challenges in protecting a building from moisture related damage. Proper protection requires an integrated system of materials. Master Builders Solutions' wide range of chemistries (polyurethane, epoxy, methacrylates) can be customized to meet diverse application requirements from speed to durability to aesthetics.

### Concrete Strengthening

The effects of corrosion, physical damage or a change of use can shorten the life of a building. MasterBrace® composite strengthening systems are designed for strengthening beams, slabs, walls and columns. MasterBrace can cost effectively meet complex repair challenges while delivering versatility, ease of application and long-term performance.



# A Vision for Success



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The restoration of existing buildings in a sustainable manner is an extraordinary opportunity. What part will you play? As part of Master Builders Solutions, we offer technology, materials and know-how; our knowledge and expertise span continents, yet we are ready to team up locally to help you, our customers, succeed.

### It takes commitment, vision and people you can count on

#### How committed are we to building restoration?

Immensely. We consider the urgency for sustainability as a call to action for us all; a new ethic in building, with restoration at it's foundation.

**A Legacy of Innovation.** For over 100 years, the brands of Master Builders Solutions and the people who support them have been focused on building restoration. Countless “firsts” and innovations have led the industry. Our eyes were on the future then, and the future is now. Master Builders Solutions continues to invest in people, research, state of the art processes and forward thinking to solve the restoration challenges ahead.

**Experience.** When you need support we're the best there is. The average industry tenure of our sales and technical service groups is 20 years, and Master Builders Solutions continues to recruit, attract and develop professionals with world-class expertise.

**Industry Advocacy.** Utilizing our formidable influence and resources, we reach out to advance restoration within the industry through associations and by building alliances. Around the world, Master Builders Solutions is actively involved in reshaping the way we build by providing innovative products to customers who are, in turn, building better structures.

**Technological Advancements.** From solving significant industry problems such as cracking in concrete, sealant adhesion, moisture and corrosion management, to innovating high performance materials from renewable sources... our investment in research advances technologies and methodologies.

**World-class expertise.** Highly experienced and passionate about what they do, Master Builders Solutions technical professionals are considered among the most knowledgeable restoration experts in the industry. From sales through technical service, the Master Builders Solutions support network of experts can become your most valuable restoration resource.

#### It's all here—what part will you play?

Restoration is an opportunity for us all to make an important impact on the built world—and it begins in our own backyard. At Master Builders Solutions we are passionate about restoring and preserving our built environment. What part will you play in the story of your community's restoration and revival? Change requires commitment. All that remains is the commitment and the will to do the right thing.



## Master Builders Solutions

The Master Builders Solutions brand brings all of MBCC Groups expertise together to create chemical solutions for new construction, maintenance, repair and renovation of structures. Master Builders Solutions is built on the experience gained from more than a century in the construction industry.

The know-how and experience of a global community of MBCC Group construction experts form the core of Master Builders Solutions. We combine the right elements from our portfolio to solve your specific construction challenges. We collaborate across areas

of expertise and regions and draw on the experience gained from countless construction projects worldwide. We leverage global MBCC Group technologies, as well as our in-depth knowledge of local building needs, to develop innovations that help make you more successful and drive sustainable construction. The comprehensive portfolio under the Master Builders Solutions brand encompasses concrete admixtures, cement additives, chemical solutions for underground construction, waterproofing solutions, sealants, concrete repair and protection solutions, performance grouts and performance flooring solutions.

## Master Builders Solutions products for the Construction Industry:

### MasterAir®

Solutions for air-entrained concrete

### MasterBrace®

Solutions for concrete strengthening

### MasterCast®

Solutions for manufactured concrete product industry

### MasterCem®

Solutions for cement manufacture

### MasterEmaco®

Solutions for concrete repair

### MasterFinish®

Solutions for formwork treatment

### MasterFlow®

Solutions for precision grouting

### MasterFiber®

Comprehensive solutions for fiber reinforced concrete

### MasterGlenium®

Solutions for high-performance concrete

### MasterInject®

Solutions for concrete injection

### MasterKure®

Solutions for concrete curing

### MasterLife®

Solutions for enhanced durability

### MasterMatrix®

Advanced rheology control solutions for self-consolidating concrete

### MasterPel®

Solutions for water tight concrete

### MasterPolyheed®

Solutions for high-performance concrete

### MasterPozzolith®

Solutions for water-reduced concrete

### MasterProtect®

Solutions for concrete protection

### MasterRheobuild®

Solutions for super-plasticized concrete

### MasterRoc®

Solutions for underground construction

### MasterSeal®

Solutions for waterproofing and sealing

### MasterSet®

Solutions for retardation control

### MasterSure®

Solutions for workability control

### MasterTop®

Solutions for industrial and commercial floors

### Ucrete®

Flooring solutions for harsh environments

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