



DESIGN INSTALLATION SYSTEMS, INC.

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AT DESIGN
INSTALLATION
SYSTEMS,
OUR
REPUTATION
IS IN OUR
WORK.



SEPTEMBER FEATURES

PROJECT SPOTLIGHT:

NORTHWESTERN UNIVERSITY MONTGOMERY WARD BUILDING

INTRODUCTION

One of the most rewarding elements of exterior restoration is viewing a completed job. Successful completion leaves a building façade looking better than when it was found, with the assurance that below the surface, the wall has been stabilized and will be firm and safe for years to come. Often, Design Installation Systems is called in when a failure is imminent. At these times, work may be completed on a selective basis and we know that our work has been both important and fulfilling. Other situations involve entire buildings and more long-term plans. We look forward to these projects and remember them fondly for years after their completion.

Very often in our industry, people tend to forget the human element. As the people charged with completing a restoration, we feel responsible for the work and how it is carried out. We take our responsibilities seriously and take great pride not only in the finished project, but also in the completed process that brought about the finished product. To a large extent, the process is the project. Most projects are worked out on paper during the bidding process; a successful bid is not the result of simply placing low unit costs into a template and generating a final cost. A plan must be outlined along with an understanding of means and methods including manpower and

equipment requirements. Material availability and pricing are components that cannot be ignored given the special requirements of this industry.

With the front-loaded requirements of the planning and bidding processes, it should be no surprise that providing concise, competitive bids is our goal. Additionally, it should be noted that winning a bid for a long-term, multi-phase, full building restoration is a deeply satisfying feeling for us. When a building owner or manager, working with an architectural or engineering firm places his or her trust in DIS to complete such a project, we understand the bond of trust placed in us and we work hard to keep that trust.

In this issue, we will highlight one of these multiphase, long-term projects. It is a project in which Design Installation Systems has had the opportunity to implement many of our company's resources – a project where the challenges equal the rewards, and the hard work in the field is made possible by our successes in the office. Communication with the owner, building staff, and occupants has been continual, honest, and constructive. The project is in many ways a typical scenario for DIS; however, as every building is different, there are no typical projects.

(continued on page two)

PROJECT SPOTLIGHT: NORTHWESTERN UNIVERSITY/ MONTGOMERY WARD BUILDING

Northwestern University owns and operates many buildings in and around Chicago. As a major medical and education institution, Northwestern understands the importance of maintaining safe and efficient facilities. As part of ongoing operations, the university employs specialists to monitor and evaluate building maintenance needs and conduct periodic inspections to ensure safe and continuous functionality. On occasion, the Northwestern staff calls in outside consultants and contractors to verify existing conditions and monitor or repair potential problem areas. It was during one such consultation that Design Installation Systems was first introduced to staff members at Northwestern.



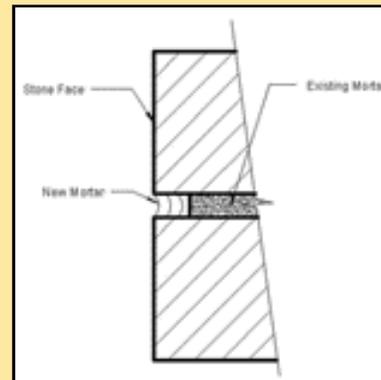
After numerous successful projects of varying size and difficulty, DIS has shown building owners that we are able to complete any exterior restoration work needed. Having buildings of all shapes, sizes, and forms of construction, the owners recognized the value of having a contracting firm such as DIS at their disposal. Many of the Northwestern buildings

in downtown Chicago are multiuse, high-rise structures with limestone facades. Design Installation Systems was asked to complete restoration work on one such building in 2000. The Montgomery Ward Building was to be a complete renovation repair project expected to be ongoing for the next few years.



The project documents, as prepared by Wiss, Janney, Elstner Associates, describes the building as: "...an office and laboratory building for Northwestern University that was built in 1925. The main structure is 15 stories tall with an additional 5-story tower at the center." The building is clad in limestone and shows normal signs of aging. Areas of most concern are cracking stone around window heads and stress cracks at some corner locations. Although not uncommon in a building this age, the owner was knowledgeable in these matters and knew that when signs of deterioration are visible, conditions could worsen rapidly. Water entering these openings in the wall would eventually lead to major problems.

Knowing that the façade needed work a plan was formulated. In addition to selective replacement and rebuilding, the building would undergo a complete maintenance regimen. Maintenance items would include tuckpointing mortar joints, replacing deteriorated sealants, and cleaning the limestone itself.



Mortar joints throughout the façade are to be tuckpointed. Some open joints in the walls had been allowing water into the wall system. Although leaking into the building may not occur in these areas, water in the wall system has led to deterioration of steel supports and washing out of adjacent mortar. Tuckpointing is the most efficient and economical way to avoid these more complicated repairs.

Tuckpointing or repointing involves grinding out old, deteriorated mortar and refilling the joint with fresh mortar. The procedure must be completed with great care as it is important to remove all old mortar from the stone without chipping or cutting the stone itself. Depths of cuts change but are normally around $\frac{3}{4}$ inch. Tuckpointing mortar is used to repack the joint and is placed in $\frac{1}{4}$ inch lifts.

Reworking window heads is an element of the work that varies from area to area. Work ranges from simple tuckpointing to full rebuilding. In areas where removal was done, exposed steel was rehabilitated and flashed for longevity of repair. In some areas DIS provided handcrafted, sculpted mortar repairs to match the existing profiles. Other areas called for replacement of stones over angles where no decorative pieces were present. In these areas, it is important to match the color and size of the replaced stone as close as possible. Our in-house stone cutting fabrication facilities are invaluable in providing the best matches in the shortest amount of time.



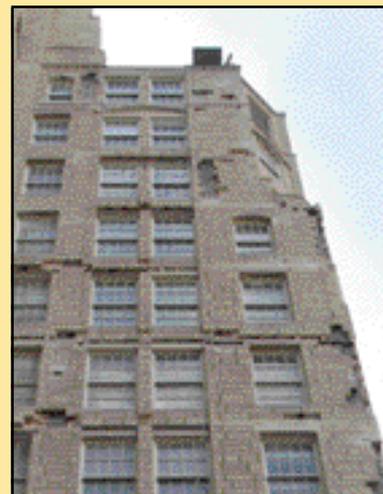
In some areas of the building, where brick and stone are used to make parapet walls, rebuilding was needed. Because of water infiltration and freeze-thaw damage, walls were displaced and stone had shifted away from the backup. These cases call for brick and stone masonry work; not always completed together, these two crafts are completed by DIS as one seamless rebuild without the use of subcontractors. During the rebuilding process stainless steel straps are built into the wall, holding the stone and brick together in a monolithic system. After stone wall caps are reset, the wall becomes a closed, water-resistant structure.



As discussed in earlier issues of this publication, corners are especially susceptible to deterioration. In the case of the Montgomery Ward Building, there are some small outcropped areas, irregularly shaped with numerous corners, requiring special attention. Corner replacements must be completed with care, as stability of the remaining pieces cannot be compromised.



Even with numerous stones removed, the wall remains stable and weather tight. This can only be accomplished with proper planning and careful execution. Remaining stones are braced and openings are sealed against wind and rain.



Design Installation Systems has been working on the Montgomery Ward Building for the same owner and the same engineer for three years. The project is proceeding and areas worked on have been improved significantly. All in all, this has been a rewarding experience — multi-phase project with specific goals and worthwhile improvements. We thank the owner and engineer for giving DIS the opportunity to rise to this challenge and look forward to continued service and even greater achievements.

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