

Piedmont Restoration Stops Water Intrusion



Chamberlin Roofing & Waterproofing performed roofing and waterproofing remediations on the Piedmont at River Oaks.

The Piedmont at River Oaks is a four-story luxury apartment complex comprised of 80 residential units and a parking garage. Located in Montrose, also known as "The Heart of Houston", the residents are minutes from restaurants, parks, museums, retail and running trails. Built in 2006, time and weather had taken their toll on the buildings. Additionally, the original building wrap waterproofing had failed, and through-wall flashing and weep system at each floor line were

not installed. These circumstances necessitated a large-scale renovation. Chamberlin Roofing & Waterproofing was contracted by Building Engineering Consultants, Inc. (BECI) to perform both roofing and waterproofing scopes.

This vibrant area is home to hundreds of Houstonians and giving them quality, safe housing is vital to the community. Chamberlin's restoration work included replacing deteriorating

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GUEST COLUMN



Andy Wharton
Vice President - General Manager
Chamberlin Roofing & Waterproofing

Expanding Horizons for 3D Scanning

The Westin Irving Convention Center Hotel opened in the spring of 2019 across from the Irving Convention Center at Las Colinas in the DFW Metroplex. Boasting 350 rooms and a Mesa Mezcal restaurant, this hotel opening marked the completion of the visitor district for the City of Irving.

The visitor district was a vision to enhance economic development that started with 40 acres of empty land purchased

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balcony handrails, remedying water infiltration by establishing an improved waterproofing system, recladding the façade and replacing pool drains. These elements not only delivered improved aesthetics, but also created safer living conditions and gave the buildings a sustainable solution to mitigate water infiltration.

IT'S ABOUT TIME

Prior to job start, Chamberlin project management created over twenty schedules before finding one that would work. The challenge was systematically integrating four to five trades to a strict timeline, each working at different paces within the same small, constricted work areas. Additionally, the project schedule to complete the demo, restoration and re-roof of two buildings was only eight months long. Chamberlin closely monitored each crew's production and adjusted the schedule when necessary to help mitigate any one trade restricting the progress of another.

CHAMBERLIN CALIBER

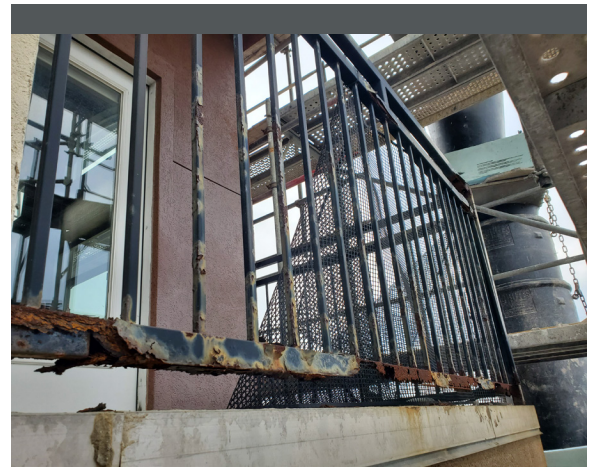
Chamberlin prides themselves on doing a job right one time, the first time. There were many quality control checks in place throughout

the duration of this project. Chamberlin conducted daily and weekly reviews and worked with the manufacturers on precise, efficient installations. Chamberlin had a full-time, on-site project coordinator who helped oversee quality and keep the project on track, and the Engineer of Record performed weekly site visits.

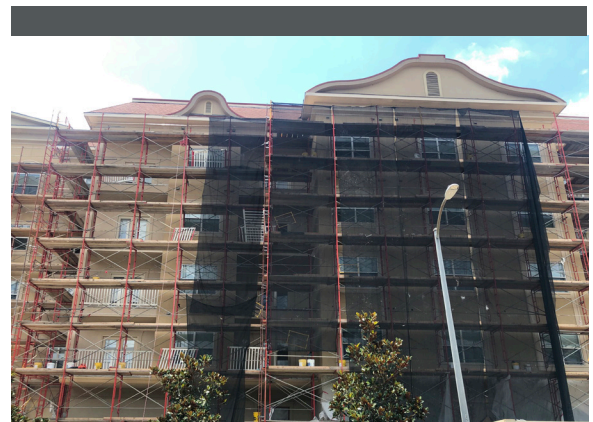
During remediation of the exterior building walls, almost 50,000 square feet of stucco was recladded. Underneath, over 27,000 square feet of sheathing needed to be repaired. Once the repairs were made, the City of Houston inspected all sheathing and lathe before new stucco was installed. Good communication among the various trades, project management, operations and quality assurance staff was essential to delivering a high-quality project. Despite having over 30 inclement weather delays, Chamberlin was able to complete the project on time, with no leaks and with zero safety incidents.

SPEAKING OF SAFETY

Chamberlin provides craft and safety training throughout the year with Chamberlin University.



Chamberlin repaired 80 deteriorated balcony railings.



Extensive netting was hung to prevent falling debris during the exterior restoration.

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(3D SCANNING continued from pg. 1)



Westin Irving Convention Center Hotel pool deck

in 2001. Though there were setbacks throughout the years, the convention center opened in 2011 followed by the Toyota Music Factory in 2017. Now this convention center hotel with ample meeting space, indoor and outdoor event space plus a grand ballroom will attract prominent groups and conventions. Large group business and multi-day bookings are anticipated to have a large community impact and generate business for the City of Irving.

THE POOL DECK

Specialty contractor Chamberlin Roofing & Waterproofing was contracted to install the two-tiered terrace for the new hotel. A full paver deck was specified to surround the pool on the upper level.

Pool Deck Stats:

- 6,220 square feet of pavers
- Includes five treads and risers and ramp
- Some pavers mortar set
- Highly sloped structural deck
- Required R=20 rigid insulation (4" thickness)

TECHNOLOGY IN CONSTRUCTION

Laser scanning with 3D modeling has been seen in the construction industry for some time. It can lower risk by providing accurate as-built drawings and can illuminate

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Educating our team members on safety and technical skills empowers them to deliver quality, cost-effective projects that are completed safely and productively. For each project, and Piedmont was no exception, Chamberlin works to provide our technicians the proper knowledge, tools and equipment they need to complete their scopes.

The project site was crowded with tradespeople and residents. When working overhead, the crew installed extensive safety netting to keep workers and residents safe from falling debris. The adjacent walkways were also covered to protect pedestrians. Chamberlin's safety coordinator was invited to speak to other trades on several occasions to help them keep their approach to safety uniform and uphold equal importance of safety regardless of the scope of work.

GETTING CRAFTY

For the new modified roofing system to meet an R-Value of R-25 to fulfill the project's specifications as well as the City of Houston Code, more insulation was required than for the original roofing system. Due to the increase of insulation thickness, Chamberlin realized the minimum eight inches flashing height required by the manufacturer for this system was going to be a challenge in

some areas. For example, the space around the elevator penthouse only allowed for less than two inches of flashing. The resolution was installing plywood on all four sides at the elevator penthouse which allowed for the proper flashing height. The rest of the penthouse was wrapped in TPO roofing membrane sealing it watertight.

KEEPING WATER OUT

The need to reclad a stucco building short of its projected life is likely evident of poor waterproofing during initial construction. The strength of Chamberlin's reclad work on Piedmont was in the waterproofing plans. The BECI-Chamberlin team understands water management, and BECI developed every aspect of the reclad system from the standpoint of keeping water out of the building.

In addition to the original building waterproofing failing, the lack of through-wall flashing at each floor line allowed water to escape behind the cladding. Moving to the BECI reclad design provided for water shedding at all floor levels without changing the aesthetics of the building.

In less than eight months, Chamberlin provided superior waterproofing and

roofing services in a timely manner with special considerations for quality control and safety. The Piedmont at River Oaks can now offer their residents a watertight home that is built to last. ■



Chamberlin recladded exterior stone and stucco and replaced failing waterproofing underneath.

(3D SCANNING continued from pg. 2)

discrepancies early on in the project before they turn into change orders, which results in multiple benefits for the project team and owner. However, it is most often used on interior and exterior walls for as-built conditions or access without equipment, MEP location verification and architectural documentation.

Chamberlin knew this technology existed, saw how it benefited other trades they worked with and ultimately decided to find out how they could utilize it to enhance their projects. For the Westin Irving Convention Center Hotel pool deck, they began by consulting with the paver manufacturer. They, like Chamberlin, had not experienced this type of technology used before for a pedestal and paver deck system installation. Next, Chamberlin conferred with a 3D laser scanning service provider. Though they had not heard of such an application for this technology either, together they arranged to laser scan and create a 3D model of the Westin's pool deck.

LASER SCANNING + 3D MODELING

TruePoint Laser Scanning provided high-definition laser scanning services to capture the existing conditions of the concrete pool deck before the waterproofing and pavers were installed. They captured comprehensive point cloud data with a survey-grade Leica laser scanner. This point cloud data represents spatial data as a collection of coordinates providing large datasets that can be valuable for decision making. Objects observed were the concrete structural deck, exposed columns and



Leica laser scanner

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(3D SCANNING continued from pg. 3)

beams, grade and elevation changes, pool outline and drains, walls and doors.

These laser scans can define critical details to aid in the installation of the pool deck system. Laser scanning is limited to line of sight visibility, and there are important factors to consider for accurate data retrieval. Items on the floor should be removed prior to scanning and stationary objects such as parked vehicles or construction equipment should be taken into consideration as well. Inclement weather or high winds could cause delays for exterior scans.

After the scans, a 3D model of the hotel pool deck was created that included the basic structural elements such as the exposed concrete deck and structural supports plus the basic architectural elements. Items such as mechanical, electrical and plumbing (MEP), railing, ladders, catwalks and ancillary spaces were not included in the model. The scans and model were delivered in five to ten business days via an electronic file share platform.

3D TECHNOLOGY ADVANTAGES

After the 3D model was made from the on-site scans, Chamberlin used the model to take accurate measurements, within centimeters, of the finished products. This was a valuable asset in many ways for the project.

First, it created accurate material measurements and quantities. The

deck was to receive a cold fluid waterproofing system comprised of a 120 mil waterproofing membrane, drainboard and insulation. Pedestals and pavers were to be installed over the waterproofing system. Accurate material measurements and quantities allowed for less material waste. Also, ordering materials according to field conditions helped mitigate unforeseen conditions during installation and possible material replacement orders.

The 3D technology also confirmed the finished paver heights to doorways, ramps, stairs and pool copings. Having this as-built knowledge beforehand allowed the team to create solutions proactively instead of incurring potential project delays while developing new plans or performing re-work. All of these aspects lent to more productivity, better project timing and cost savings. Additionally, the technology allowed for less moving of materials which not only saved time but cut down on potential safety hazards associated with moving heavy concrete pavers, not to mention possible material damage.

Finally, a big discovery was made with the data collected from the laser scan. Two layers of two-inch insulation were specified for the entirety of the pool deck. Even if the pedestals were installed at their maximum height of 21 inches, a two-inch gap remained between the top of the pedestal and most of the pool coping height. If this condition had been discovered during installation, it could have caused major delays. Since it was

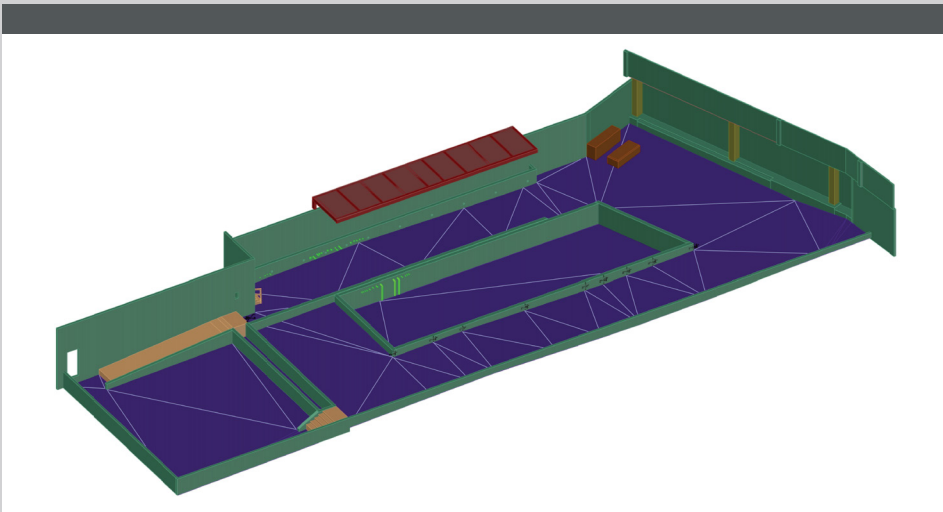
discovered beforehand, the team was able to prepare for additional insulation. They opted for two three-inch layers of insulation to fill the gap while not adding additional labor costs. Furthermore, due to the concrete deck's slope, even more than six inches of insulation were required in some areas. The laser scan data allowed for accurate planning and material ordering ahead of time.

RETURN ON INVESTMENT

For the Westin Irving Convention Center Hotel pool deck project, the laser scanning and 3D modeling saved nearly \$9,000 (approximately \$1.60 per square foot). To generate this value, the following was taken into consideration:

- A. Potential Job Costs Saved
 - Additional layer of insulation labor
 - Additional insulation at highly sloped areas
 - Leftover incorrectly ordered material removal
 - Cost of additional pavers
- B. Cost of high-definition laser scanning and 3D modeling

The project benefited from having the correct materials and accurate quantities at the time of delivery plus no re-ordering of materials, which was made possible by the scanning and modeling. This allowed for the project to stay on schedule and realize material, time and cost savings. ■



3D model of pool deck

This article was originally published in the Fall 2020 issue of SWRI's Applicator.

Andy Wharton is the Vice President – General Manager for Dallas and Oklahoma with Chamberlin Roofing & Waterproofing. He has over 16 years of experience developing waterproofing solutions in the commercial sector to keep water out of property assets. In his position with Chamberlin, he manages new and remedial construction jobs, overseeing an office and field operations team. He can be reached at awharton@chamberlinltd.com or 214-273-9110.

Property Management Professional Development

As an international educational resource for property and facility management industries, Building Owners and Managers Institute (BOMI) offers several designations that are a mark of credibility signifying proper training and experience for top property management professionals.

If you are pursuing a designation, such as Real Property Administrator (RPA®), or seeking Continuing Professional Development (CPD) credits towards the renewal of a designation, Chamberlin has the course for you. Chamberlin offers the following BOMI CPD approved classes. Earn one hour of credit for each class.

MANAGING YOUR PROPERTY ASSETS

This course covers the benefits of proactively maintaining your roof, building and parking garage plus how to create an effective maintenance program. Also, learn about potential building envelope issues and solutions.

LEAKY BUILDING

This course outlines the areas of a building most susceptible to leaks including curtain wall, door and window openings, system penetrations and flashing. It also covers leak tracking in buildings.

WATERPROOFING 101/ROOFING 101

These courses educate on different waterproofing/roofing system uses and benefits, as well as issues to look for. It also covers best practices and case studies highlighting lessons learned.

WATERPROOFING DETAILS

This course educates on the detail components of waterproofing systems and covers the transition pieces including tie-ins and lapping/seaming. Waterproofing detail best practices and leak tracking in buildings will also be discussed.

Contact your local office or call 1-877-428-1000 to schedule a class. Minimum class size restrictions apply.



Employee Profile

Tim Rosenberg
Estimating Manager
Roofing and Waterproofing
Austin and San Antonio



A day in the life:
A typical workday for Tim includes managing a team of six estimators. Most of his day is spent on data analysis, plan reading, contract negotiation and exploring ways to reduce cost and grow profits. Client development is not only a big portion of his role but also the most enjoyable aspect of his position.

Outlook:
Safety is, by far, the most important aspect of any position at Chamberlin according to Tim. The well-being of employees trumps any other priority in the organization. Customer service, quality and productivity all come in at an even second. These are the three most important aspects of being successful.

Favorite part of Chamberlin:
The structure of the company is what Tim enjoys most about working at Chamberlin. He thinks the group of individuals are designed to work well with each other. From ownership to field personnel, the management of the company enables everything and everyone to work together almost flawlessly.

Outside the office:
Tim generally enjoys spending time outdoors. He likes to travel, and you can often find him hunting, fishing or manning the grill.

Greatest personal accomplishment:
Tim considers his two little girls, Eleanor and Delilah, to be his most important accomplishment in life. ■

We asked Tim to choose his favorites from this random list of things as a way to get to know him a little better:

TIM'S LIST:	
Zoo	Aquarium
Fishing	Hunting
Movie	TV show
Mexican	BBQ
Beach	Mountains

LOCATIONS:

HOUSTON

4545 Langfield Road
Houston, TX 77040
Ph. (713) 880-1432
Fax (713) 880-8255

DALLAS/FT. WORTH

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Ph. (214) 273-9110
Fax (214) 273-9120

AUSTIN

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Buda, TX 78610
Ph. (512) 275-1600
Fax (512) 523-9350

SAN ANTONIO

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San Antonio, TX 78233
Ph. (210) 822-6536
Fax (210) 822-8211

OKLAHOMA CITY

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Moore, OK 73160
Ph. (405) 680-0506
Fax (405) 680-0508

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ST. MARY'S SEMINARY - NEW DORM - GALVESTON, TX

New Construction Roofing

Contract Amount: \$600,000 (approx.)

Owner: Archdiocese of Galveston-Houston

Architect: Studio Red Architects

General Contractor: Axis Builders, LLC

Scope of Work: Installation of clay roof tiles, copper flat seam roofing, curb flashings, hot modified roofing, flashing and sheet metal, expansion joints, masonry control joints, dampproofing, air barrier, window metal flashing, capstone metal flashing and site sealants
Project Description: Dormitory at a seminary

L'AUBERGE HOTEL AND CASINO - LAKE CHARLES, LOUISIANA

Remedial Roofing & Waterproofing

Contract Amount: \$14,500,000 (approx.)

Owner: Penn National Gaming

Architect: Montgomery Roth

General Contractor: Turner Construction and KAP Construction and Electric
Scope of Work: Removal of two-ply modified bitumen and tile roofing and installation of new modified bitumen membrane roofing, standing seam roofing, PVC roofing, flashing and sheet metal, elastomeric coating on EIFS façade, EIFS control joint treatment, simulated stone replacement, preformed expansion joint replacement, wet glazing and exterior façade joint cutout and re-caulk
Project Description: Casino resort

HEB LEANDER #2 - LEANDER, TX

New Construction Roofing

Contract Amount: \$1,000,000 (approx.)

Owner: H.E. Butt Grocery Company

Architect: Selser Schaefer

General Contractor: SpawGlass Construction

Scope of Work: Installation of wood blocking, TPO roofing, curb flashing, roof hatch, soffit panels and trim
Project Description: Grocery store

WINSTAR PARKING GARAGE COATING AND REPELLENTS - THACKERVILLE, OK

Remedial Waterproofing

Contract Amount: \$550,000 (approx.)

Owner: Chickasaw Nation

General Contractor: Chamberlin Roofing & Waterproofing

Scope of Work: Installation of traffic coating and concrete sealers
Project Description: Luxury resort and casino

CHATHAM HILLS RESIDENCE - DALLAS, TX

New Construction Waterproofing

Contract Amount: \$300,000 (approx.)

Owner: BR Trust

Architect: Marwan Alsayed Inc.

General Contractor: Sebastian Construction Group

Scope of Work: Installation of dampproofing, hot-fluid rubberized asphalt, sheet waterproofing, fluid applied waterproofing, thermal insulation and air barrier
Project Description: Residential community and country club

1155 BARTON SPRINGS - AUSTIN, TX

New Construction Waterproofing

Contract Amount: \$700,000 (approx.)

Owner: Greystar

Architect: Meeks and Partners

General Contractor: Linbeck Group, LLC

Scope of Work: Installation of hot fluid waterproofing, direct sheet waterproofing, traffic coating, thermal insulation, air barrier, roof pavers, firestopping, joint sealants, site and paving sealants and flashing and sheet metal
Project Description: Mid-rise multi-family housing

UTSA MAIN BUILDING RESTORATION - SAN ANTONIO, TX

Remedial Waterproofing

Contract Amount: \$1,100,000 (approx.)

Owner: The University of Texas at San Antonio

Architect: WJE

General Contractor: Ryan Companies, Inc.

Scope of Work: Installation of thermal insulation, air barrier, sheet metal flashing, firestopping, tilt panel sealants and site sealants
Project Description: Multipurpose university building

LOVERS LANE KALWALL RENOVATION - DALLAS, TX

Remedial Roofing

Contract Amount: \$900,000 (approx.)

Owner: Corrigan Investments, Inc.

Architect: Beck Group

General Contractor: Beck Group

Scope of Work: Installation of wood blocking, copper roofing panels, gutters and downspouts, single-ply roofing, sheathing, curb flashing, hot modified roofing, TPO roofing, PVC membrane roofing, flashing and sheet metal
Project Description: Retail center

For a complete list of specialty contracting services, visit www.chamberlinltd.com.

ROOFING/SHEET METAL

- Modified Bitumen/BUR
- Single ply
- Reflective coatings
- Vegetative roofing
- Metal standing seam
- Roof related sheet metal
- Tile

WATERPROOFING/CAULKING

- Joint sealants
- Membrane waterproofing
- Elastomeric wall coatings
- Traffic coatings
- Expansion joints
- Dampproofing/flashing
- Water repellents/metal flashing

BUILDING/GARAGE RESTORATION

- Concrete/Masonry restoration
- Exterior cleaning & coating
- Epoxy & grout injection
- Bearing pad replacement
- Structural repair
- Paver repair & replacement

ROOF MAINTENANCE/LEAK REPAIR

- Roofing & waterproofing expertise
- Leak repair specialists
- Preventative roof maintenance plans
- Roof & building envelope surveys
- Proactive Roof Asset Management
- On-call service 24 hours/365 days a year
- Free estimates