

Chamberlin Chosen as the One Source for Building Envelope Restoration



The new metal standing seam roof of Great Hills Baptist Church in Austin, Texas.

Great Hills Baptist Church is a dynamic congregation with a 300,000 sq. ft. sanctuary and education facility near the Arboretum in northwest Austin, Texas. With two Sunday morning worship services, Wednesday services, group meetings and a pre-school ministry, the church is constantly buzzing with activity. Though their facility is only 20 years old, the congregation has been together for over 60 years. In the 1980s the church members built their current meeting place on Jollyville Road one building at a time. Today, the church has three structures; a sanctuary and two adjoining administration and education buildings.

The church began experiencing leaks in the sanctuary ceiling and around windows in the administration office and education wings. "The existing metal roof at the time was an exposed fastener system over sheet metal supports with fiberglass insulation and a vapor retarder," explained Ken Ollinger with Austech Roof Consultants. "In our Austin climate, the vapor retarder was contributing to condensation, and because of deficient flashings it led to leaks in the church sanctuary."

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CONSULTANT'S CORNER:

*By: Mitzi Roadcap
Senior Consultant, Curtainwall
Design & Consulting, Inc.*



Continuity of the Weathered Exterior Envelope — Can it be Realistically Achieved?

The majority of those in the construction industry have sat through at least one presentation or read at least one article that discusses how to build a more energy efficient building; how to manage condensation and water infiltration; how to enhance thermal performance of the exterior envelope without creating condensation issues; or how to build "green buildings." One important method utilized in achieving enhanced building

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Since their goal was to become a more “radiant church,” Great Hills decided to make the necessary investment to ensure their facility would be around for many years to come to serve the community and their members.

With a plan of action put together by Austech, Chamberlin was chosen to be Great Hills’ single source contractor to resolve all roofing and waterproofing issues. “Chamberlin was hired for two reasons,” said Great Hills’ Administration Pastor, Mike Mericle, “price and reputation.”

Chamberlin’s scope of work included installing a new concealed fastener metal roof system over the sanctuary, reflashings approximately 90 windows, installing joint sealants and applying an elastomeric coating to the entire EIFS facade. “This project fit our capabilities perfectly because of the large scope of roofing and waterproofing work that we are able to self-perform,” said Roofing Project Estimator, Russell Johnson.

The leaking roof in the sanctuary caused drywall damage to the ceiling. “It was a little tricky repairing the interior sanctuary ceiling,” said Waterproofing Senior Project Manager, Pat Halaszyn. Work took place 100 feet in the air and was only accessible by narrow cat walks. “I liken it to Michelangelo painting the Sistine Chapel but on a tight rope with a modern day safety harness,” Halaszyn added. The ceiling drywall was nimbly



Chamberlin workers remove the old roof of the sanctuary in preparation for the new metal roof system.

repaired while the exterior metal roof was being replaced.

Chamberlin removed the existing 50,000 sq. ft. metal roof over the sanctuary and replaced it with a new standing seam metal roof system and insulation all while keeping the church open for services. The roof is shaped like an uneven hexagon with a steep 6:12 pitch, so stringent safety precautions were instituted during the replacement process.

To eliminate access points for water, Austech’s roofing specifications called for single, monolithic-like metal panels to run the full height on the roof. Some areas of the roof were in excess of 130 feet long. Since such large panels are not easily transported,



Chamberlin reflashed and recaulked windows.

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performance is to provide continuity between the systems that comprise the weathered exterior envelope.

The weathered exterior envelope includes all of the assemblies that are used on the exterior of a building’s structure to isolate the interior from the exterior. This includes the roof assembly, the exterior wall assembly and the below-grade assembly whether it is a waterproofing or dampproofing system. Beyond aesthetics, the sole purpose of each of these assemblies is to protect the building’s structural members, interior finishes and the conditioned interior space from the detrimental effects of the exterior environment. The assemblies must control air infiltration and exfiltration, control moisture migration in both liquid and vapor form, provide thermal isolation between the conditioned interior space and the exterior climate and use individual components that will not adversely affect the indoor air quality or have a detrimental affect on the environment. They must also accommodate all imposed structural movements transferred into the

systems from the building’s structure in addition to their individual component thermal movements, fabrication and construction tolerances from adjacent systems as well as individual component tolerances within the assembly, imposed deadload and windload forces, and (depending upon the building’s end use and location) seismic, impact and blast loads.

Failure to fully design the transition between the exterior envelope assemblies prior to field installation quite often leads to improperly installed or incompatible materials coming into direct contact with one another leading to failure of one or both of the components. This in turn leads to water infiltration issues on the interior, uncontrolled air flow and decreased thermal performance of the exterior envelope. The type of materials used in each assembly will affect the means and methods used to complete the transition as well as the installation sequencing, so the design of the assembly

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The Archzilla® sheet metal truck custom fabricated material on location.

Chamberlin utilized Architectural Building Components' Archzilla® job site production truck to custom fabricate the metal on location. This also allowed the Chamberlin team to take the panels directly from the truck to the roof for installation, making for a more productive project. Additionally, Chamberlin replaced the vertical metal wall panels that tie into the roof at the eaves and installed new vertical panels over a facade area surrounding the large cross at the peak of the roof.

While the new roof was being installed, Chamberlin waterproofers reflashed and recaulked windows then used an elastomeric coating to seal the whole facade. The new elastomeric coating changed the church from a beige to a brick red color, making it stand out a bit more in the neighborhood.

"The bright, new look definitely helps us reach toward our goal of becoming a more radiant church," Mericle said. "Our facility will now be able to serve us well for years and years to come," he continued, "Chamberlin was great to work with and very accommodating. Churches are a unique environment with activities and children in the facility every day, and Chamberlin was most cooperative and flexible with our schedule. It was a well coordinated effort."

Great Hills' members faithfully prayed for the Chamberlin team every morning and even provided a fellowship meal for the workers once a week, a treat to which the team was not accustomed. Great Hills' prayers and extra care were much appreciated and helped Chamberlin beat the production schedule without any accidents or injuries. The new roofing and waterproofing was even put to the test last September when 12 inches of rain fell on Austin in one day. The city saw major flooding, but Great Hills Baptist Church did not have a single leak from the new roof or restored building facade. Both Great Hills' and Chamberlin's prayers were answered! ■



The new elastomeric coating being applied to the church facade.



The completed project.

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transitions should be project specific based upon the individual products used in the application.

For the sake of brevity, assume that the design team consisting of the architect, the structural engineer, and their assorted consultants have done their job in the initial design stages so that the exterior envelope systems depicted within the architectural drawings and specified in the project documents meet the overall building performance requirements for air, water, thermal and structural integrity. Let's also assume they meet the building and energy code requirements and will complement and enhance the HVAC system design to reduce energy costs. Obviously, if issues are discovered with the document details or specified products, then they should be brought to the attention of the design team as soon as possible for a quick resolution.

If we acknowledge that providing continuity between the exterior envelope assemblies is good construction practice and that it will



This lack of continuity between the sill of glazing, EIFS and roofing at parapet walls creates potential points of water infiltration.

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improve the overall performance of the building, then the question becomes, “How do we realistically achieve this continuity?” The short answer is a massive coordination effort between all involved trades and members of the design team ending with working details. The details should clearly define and depict all materials used in the transition and in the proper installation sequence.

A general checklist for the process would be:

1. Choose the individual components of each exterior envelope assembly that is to be used on the project. Once the manufacturer and the material are chosen then it can be determined how the membranes will be married together to achieve continuity.
2. Define all of the different conditions that exist on the project so a detail can be generated for each condition. Pay particular attention to changes in plane where a low roof parapet terminates into the face of a return exterior wall; inside and outside corners; plaza deck waterproofing and roof membrane transitions into the sill of an exterior wall; and glazed curtain wall parapets. Keep in mind that the water-resistant barrier on the roof must marry into the water-resistant barrier of the opaque exterior wall which must then marry into the water-resistant barrier of the below-grade waterproofing or dampproofing to achieve continuity. The laps of the various barriers must be in a shingle type fashion in the direction of drainage, starting with the roof over the exterior wall and the exterior wall over the below-grade. Additionally, an air and water tight weathered surface compatible with the weather sealant should be provided adjacent to the glazed fenestration systems for the primary weather seal. The adjacent water-resistant barrier must integrate with the weathered surface to provide the continuity between the exterior wall assemblies.
3. It is important that all team members responsible for the installation of the water-resistant barrier at the exterior opaque wall, roof, below-grade system and plaza decks (if applicable) should have a general understanding of how each of the exterior wall components will function. Where is the water-resistant barrier located for each system? Is the exterior wall system a cavity wall, a barrier wall or a

wall with a hidden drainage plane? How does the system drain accumulated water? Where is the primary weather seal located? These are just a few of the questions that need to be addressed.

4. Termination of the water-resistant barrier behind opaque exterior wall elements at openings is a special condition which should be addressed once the type of glazed fenestration wall is established. This is particularly important when the opening is adjacent to a wet cavity wall construction as both water and air in the cavity wall must be isolated from and prevented from entering the opening.
5. Discuss installation schedules of the various exterior envelope systems so the sequencing of the materials involved in developing the transition details can be properly installed in the correct manner. This may require some tweaking of the installation schedule, so be flexible.
6. All involved parties sit down together and work through each of the details so that the assembly transitions work for all scopes.

So the answer to the question, “Can we realistically achieve continuity of the exterior weathered envelope?” is yes, we can as long as all involved parties are willing to work together to achieve the final goal. While each individual element used in the exterior envelope assembly may be provided and installed by a different party, all of the elements must work together as a whole at the end of the day to produce an exterior weathered envelope that will provide the owner with successful long-term performance. Upfront cooperation between the interested parties prior to construction and follow through during construction definitely contributes to the success of achieving this goal. ■

Ms. Roadcap started in the construction industry in 1980 and has been with CDC, Inc. since 1982, starting in the production/engineering department and moving into the consulting department in 1997. She is a Senior Consultant and has worked on low-rise to monumental high-rise projects across the United States, the Pacific Rim and Europe. Her primary responsibilities include working with the design team on new construction projects from the schematic design through the construction administration phase. Her particular expertise is focused on the exterior wall elements which include both fenestration systems and opaque wall systems. She can be reached at 972-437-4200 or email mroadcap@cdc-usa.com.



This photo shows no continuity between EIFS, roofing, flashing, and coping. EIFS should be flashed around parapet with an added weather seal and weep system.



The roof membrane terminates to the face of the cement plaster without a weep screed at the plaster base. As installed, the plaster system will drain out underneath the roof system.

Setting the Standard for Business Excellence



From left to right: Wayne Navarro, ABC Houston chairperson; Joe Cotten, Chamberlin senior project manager; Monica Keels, Chamberlin marketing manager; and award presenter, Jim "Mattress Mac" McIngvale of Gallery Furniture.

Chamberlin was recognized with the 2010 Business Excellence Award of Merit from the Houston chapter of Associated Builders and Contractors (ABC) in the Mega Commercial Specialty Contractor category. The ABC Business Excellence Awards program was created to recognize and honor ABC member companies based on their business and managerial practices. Chamberlin is especially honored to receive this award, because we, of course, believe our team and business practices set the standard in our industry.

Submissions were evaluated on human resource practices, business management philosophies, training and continuing education offered to employees, ABC involvement, community service, company safety, environmentally friendly practices and other evaluation methods.

Among the criteria featured in the Chamberlin award entry were our achievements related to Chamberlin

University, our in-house craft training, safety and mentoring program. Chamberlin University has not only raised the level of education and professionalism in our team, but it has also bolstered an individual sense of pride and accomplishment.

The award submission stated in conclusion, "Chamberlin is a growing company with an established reputation for excellence in the industry. There is no *one* thing that makes Chamberlin excellent; rather, it is a combination of executive integrity that trickles down to each employee, an effective business model, values that cultivate good communication and team building, and a unique niche of expertise in the marketplace. Ultimately, it is all about the team of people at Chamberlin who make the difference. We believe our team is as good as it gets." ■

Employee Profile

Paul R. Hay
Superintendent —
Waterproofing & Caulking
Austin, TX



"Paul is as calm and cool as the center seed of a cucumber," describes Waterproofing Senior Project Manager, Pat Halaszyn, "that's why Chamberlin employees and clients alike enjoy working with him." As a waterproofing superintendent, we were curious to know how Paul handles the occasional twists and turns of overseeing large waterproofing projects throughout central and south Texas. Here's a bit more about the guy who takes it all in stride.

A Day In the Life:

The day starts at about 5:30 a.m. for Paul with a quick check of the weather since it plays an important role in the installation of waterproofing material. "After that, there really is no 'typical' day," Paul says. With constantly changing manpower needs, job site conditions and scheduling issues, the day can change from hour to hour. "Simultaneously supervising multiple projects can be challenging, demanding and rewarding at the same time."

Experience:

"I worked in a lot of different fields before joining Chamberlin 10 years ago," Paul remembers. He did everything from fast food management to retail inventory and even operating a taxi service. In March of 2001, Paul started his career at Chamberlin as a laborer. Over a period of time, with a combination of hard work and "being in the right place at the right time," Paul says, he was promoted to foreman then superintendent.

Outlook:

Paul articulates his outlook on customer service, safety, quality and productivity as such: "Each affects the other. If we are not productive, providing quality work in a safe manner, our customer service will inevitably suffer. Customer service is the lifeblood of repeat business. Safety is the cornerstone of our employees' health and well-being, and productivity is useless without a quality installation."

Outside the Office:

Paul enjoys cooking and boasts a Veal Piccata specialty with a white wine and lemon caper sauce. Just one question: when can we come over for dinner? He also likes spending time with his wife and kids and taking part in his other hobbies that include fishing, woodworking and watching movies. ■

We asked Paul to choose from this list of random items to help us learn a little more about him:

PAUL'S PICKS

- | | |
|------------------|----------------|
| Freshly Squeezed | Concentrate |
| Rolling Stones | Flintstones |
| Newspaper | Internet |
| Mickey | Mighty (Mouse) |
| Manual | Automatic |

PROJECTS IN PROGRESS

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Roofing & Waterproofing

LOCATIONS:

Call the nearest local office
or 1-800-749-1432

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Fax (713) 880-8255

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2346 Glenda Lane
Dallas, Texas 75229
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Fax (214) 273-9120 / (817) 237-2676

AUSTIN

1515 Dungan Lane, Ste. 210
Austin, TX 78754
Ph. (512) 275-1600
Fax (512) 275-1603

SAN ANTONIO

9035-A Aero St.
San Antonio, TX 78217
Ph. (210) 822-6536
Fax (210) 822-8211

OKLAHOMA CITY

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Oklahoma City, OK 73108
Ph. (405) 680-0506
Fax (405) 680-0508

TULSA

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Tulsa, OK 74116
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Fax (918) 439-0067

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Arkansas, Louisiana and
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OKLAHOMA HEART HOSPITAL – Oklahoma City, OK

Roof Replacement

Contract Amount: \$1,000,000 (approx.)
Owner: Oklahoma Heart Hospital
Architect: WHR Architects
General Contractor: Nabholz Construction
Scope of Work: Remove existing roof and install new Modified Bitumen roofing system, slate tiles, flashing and sheet metal
Project Description: Cardiac care medical facility

TCU MONCRIEF HALL – Fort Worth, TX

Remedial Waterproofing

Contract Amount: \$100,000 (approx.)
Owner: Texas Christian University
Architect: KSQ Architects, PC
General Contractor: The Beck Group
Scope of Work: Joint sealants, water repellents and concrete sealer
Project Description: TCU freshman dormitory

LACKLAND AIR FORCE BASE DCF #1 – San Antonio, TX

New Construction Roofing

Contract Amount: \$550,000 (approx.)
Owner: US Army Corps of Engineers
Architects: Army Corps of Engineers and Merrick & Company
General Contractor: Lyda Swinerton Builders
Scope of Work: TPO roofing system, sheet metal flashing, standing seam metal roofing system and metal screen walls
Project Description: Airmen training classroom and dining facility

WILLIAM P. CLEMENTS STATE OFFICE BUILDING – Austin, TX

Remedial Waterproofing

Contract Amount: \$850,000 (approx.)
Owner: Texas Facilities Commission
Consultant: Wiss, Janney, Elstner Associates, Inc.
General Contractor: Chamberlin Roofing & Waterproofing
Scope of Work: Cut out and recaulk travertine and granite, window and curtain walls; wet glazing; sheet metal flashing; masonry repair; replace travertine and granite panels and helical ties; Dutchman repairs; stone patching; stone anchor repairs; facade cleaning
Project Description: Cladding maintenance and repair of Texas Attorney General's office

BAYLOR COLLEGE OF MEDICINE -

EAST PLAZA – Houston, TX

New Construction Waterproofing

Contract Amount: \$600,000 (approx.)
Owner: Baylor College of Medicine
Architect: Hellmuth, Obata + Kassabaum, Inc.
General Contractor: Linbeck Group, LP
Scope of Work: Membrane plaza deck waterproofing system, root barrier, drainage board and expansion joints
Project Description: Landscaped plaza over below-grade parking garage

CITY OF HOUSTON CENTRAL PERMITTING CENTER – Houston, TX

Remedial Waterproofing

Contract Amount: \$600,000 (approx.)
Owner: City of Houston
Architect: Studio Red Architects
Engineer: Haynes Whaley Associates
General Contractor: Manhattan Construction
Scope of Work: Exterior renovation of joint sealants, brick masonry, clay tiles and expansion joints; tuck pointing; elastomeric coating; demolition; window head beam repairs; structural concrete repairs; below-grade waterproofing and site sealants
Project Description: Renovation of existing building to house new city permitting office

HEWLETT PACKARD – Plano, TX

Roof Replacement

Contract Amount: \$300,000 (approx.)
Owner: HP Enterprise Services, LLC
Property Management: CB Richard Ellis
General Contractor: Chamberlin Roofing & Waterproofing
Scope of Work: Remove existing roof and install new TPO roofing system, flashing and sheet metal
Project Description: Multi-level office building

HOUSTON FOOD BANK – Houston, TX

Roof Replacement

Contract Amount: \$1,800,000 (approx.)
Owner: Houston Food Bank
Architect: RDLR Architects
Construction Manager: Tellepsen Builders
Scope of Work: Remove existing BUR, Modified and EPDM roofs and install new TPO roof system and insulation, sheet metal and flashing
Project Description: 270,000 sq. ft. food storage and freezer building

DONALD W. REYNOLDS CENTER – Poteau, OK

New Construction Waterproofing

Contract Amount: \$100,000 (approx.)
Owner: City of Poteau
Architect: MAGH Architecture
General Contractor: Crossland Construction
Scope of Work: Dampproofing and joint sealants
Project Description: Multi-purpose community center

ADAMSON HIGH SCHOOL – Dallas, TX

New Construction Roofing

Contract Amount: \$750,000 (approx.)
Owner: Dallas Independent School District
Architect: Corgan Associates, Inc.
General Contractor: Satterfield & Pontikes Construction Inc.
Scope of Work: Modified Bitumen and standing seam roof systems, flashing and sheet metal
Project Description: New 4-A high school

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

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- Roof & building envelope surveys
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