PROVIDING A FULL BUILDING
ENVELOPE
SYSTEM

W. R. MEADOWS®
SEALTIGHT®
A Family Company Since 1926
QUALITY...SERVICE...INTEGRITY

DESTINATION –
D/FW and the world

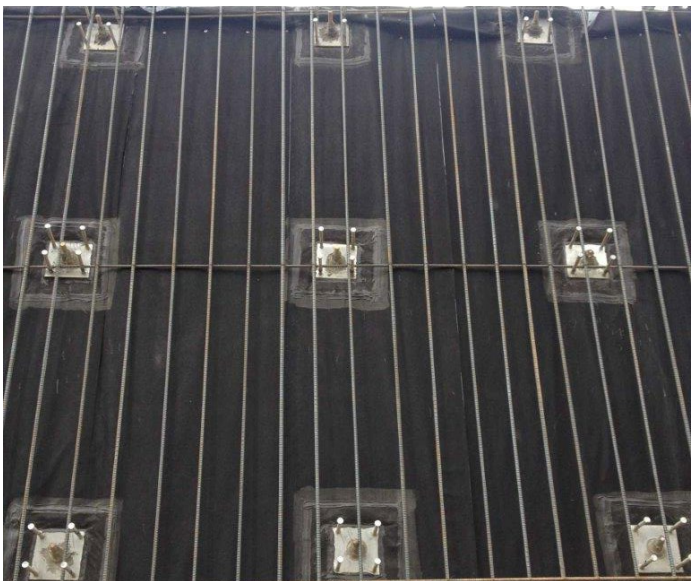
PRECON® is the choice for waterproofing on Dallas/Fort Worth International Airport rail station project

Excavated site for new D/FW airport rail station for DART Orange Line passengers. PRECON waterproofing patches and Nelson Stud base plates dot the retaining wall, prior to installation of MEL-DRAIN mat and PRECON sheets.

The Dallas Area Rapid Transit system (DART) operates America's longest light rail line (LRT). The latest extension of this 90-mile network's Orange line, however, may be the biggest in terms of passenger service, bringing riders to Dallas/Fort Worth International Airport – and access to global travel via 27 airlines including 15 flying foreign flags.

The first train arrived at D/FW in August, 2014, about four months earlier than its original targeted date. And the overall rail station project (about $27 million, according to architect of record, Dallas-based Corgan) came in under budget. Some of those savings stem from employing W. R. MEADOWS' PRECON waterproofing system during construction.

The platform itself is 450 feet long, reports Corgan's D/FW rail connector project manager Gopi Swaminathan.



Running rebar over finished, fully detailed PRECON installation, prior to pouring concrete. The concrete "grabs" soil nails protruding from Nelson Studs, strengthening the structure and, as concrete cures, PRECON forms a mechanical bond for a secure, waterproof installation.

"Working with David Loveless, Meadows of Texas, we came up with a system that saved the day in several ways."

Matt Hager, Vice President of Operations, CHM Weatherguard

CHM Weatherguard workers on boom lift apply the first sheet of PRECON on the D/FW rail station project over MEL-DRAIN mat. Note the pre-MEL-DRAIN Nelson Studs with PRECON flaps on the right.

Additional areas at each end extend the station to 550 feet. "When passengers disembark, they simply walk through a tunnel under the airport service roads, into Terminal A."

While bringing travelers to D/FW now is business-as-usual for DART, bringing the D/FW rail station to fruition was anything but routine.

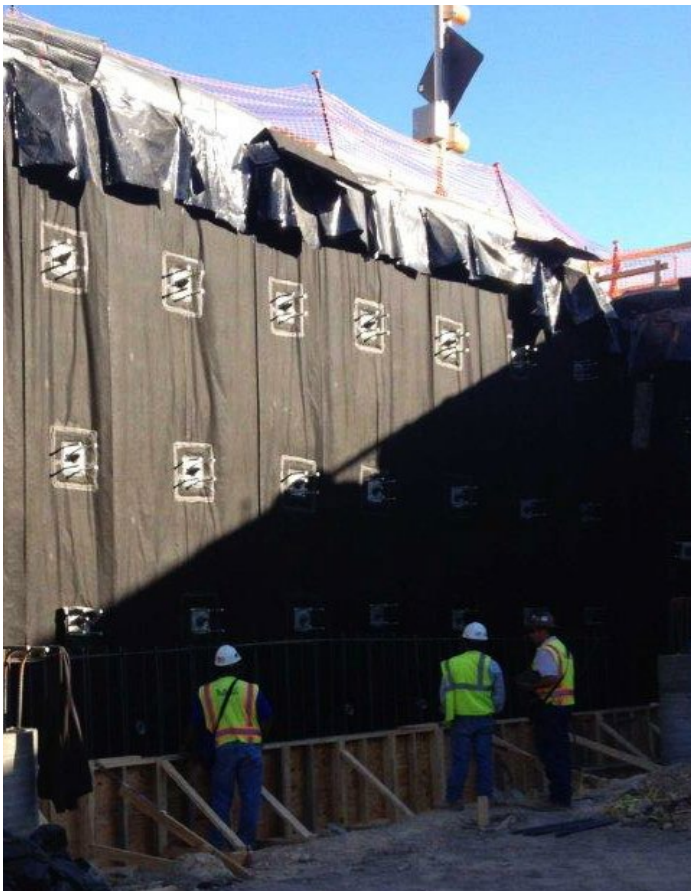
PRECON system simplifies and speeds waterproofing installation

"The station is between two retaining walls," Corgan's Swaminathan points out. "In order for the train to come in at the necessary elevation, the contractor (Balfour Beatty Construction, general contractor) had to excavate as much as 40 feet deep, apply blindside waterproofing over a shotcrete wall, and pour a new retaining wall. The waterproofing is essentially sandwiched in-between dual walls on either side."

Initial specifications by Corgan technical department director Chris Johnson listed several acceptable waterproofing products, the first of which raised several red flags for Matt Hager, Vice President of Operations for waterproofing contractor, CHM Weatherguard.

"We used a variation of Nelson Studs on this project, with base plates and four anchor bolts over soil nails drilled 42 to 45 feet deep, and tie-backs to securely seal each stud after dropping drain mat and waterproofing sheets," Hager says. "The soil nails protrude about eight inches, and the initial system specified by Corgan calls for a dome-like tie-back cover that would have protruded even further. That cover also would prevent concrete from grabbing those nails, which strengthens the structure."

Detailing the hundreds of Nelson Stud tie-backs was the primary challenge. The studs are about five feet apart, horizontally, and at seven- to eight-foot vertical intervals, points out Balfour Beatty's General Superintendent Frank Becerra. "Lots of soil nails can be drilled in a day. Detailing every single stud takes time; there are several steps. And concrete guys are coming right behind."



Final finish: upper rows of PRECON have been tied back and sealed with BEM. Bottom row Nelson Stud tiebacks are next.

CHM's Hager brought some good news, however. "Working with David Loveless, Meadows of Texas, we came up with a system that saved the day in several ways."

Teamwork and one-part BEM lead to 35%-40% less detailing time, lower installed cost

The team closely compared steps involved with several options (including the specified product) in order to find a more constructible and cost effective method.

The waterproofing product initially specified by Corgan uses a two-part liquid membrane, according to Hager. "Besides having to mix 2-gallon pails of $50 two-part material, you only have about 30 minutes before it sets up. All of the studs aren't ready – and our people can't get to them – at the same time. With some of our installers working on extension ladders and others on boom lifts, you could waste a lot of money with material setting up too soon.

"W. R. Meadows' PRECON system uses BEM, a one-part product that comes in a tube. Apply it at any time – no constraints, and no material waste. It's ready when you are."

Time and labor savings were clearly evident, and CHM's substitute request for PRECON was readily approved by Balfour Beatty and Corgan. Hager's team moved forward, ultimately using:

- 24,000 sq. ft. of PRECON, with its patented plasmatic core that provides the industry's lowest water vapor transmission rate (WVT). As concrete cures, PRECON forms a mechanical bond, securing concrete to it.
- A like amount (24,000 sq. ft.) of MEL-DRAIN™ matrix drainage material, which goes under PRECON sheets and offers high flow capacity without clogging.

Using BEM for all detailing, Hager figures that this method saved about three weeks of detailing work alone on the overall D/FW project. "It cut 35% - 40% off detailing costs."

System helps project maintain rapid pace, put D/FW station on-track to early opening

"This was a fast-paced project," Becerra asserts; "one of the most complex I've ever dealt with."

Corgan's Swaminathan concurs. "We had a lot of things going, and we couldn't shut down the road, which meant we had to do site line excavation and blindside waterproofing. The location of soil nails became an issue, too, particularly on the terminal side."

Becerra recalls that they had to have a company conduct a special survey to determine the exact location and depth of fuel lines, electrical and other utilities. "It was all plotted on a sheet, so we could adjust where we drilled soil nails. We were drilling more than 40 feet deep and originally, some soil nails were in conflict with the duct tank where all the main high voltage lines are housed. The survey process took about six weeks before we could submit plans and proceed.

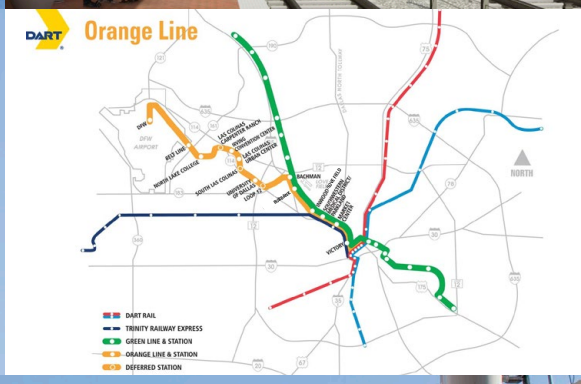
"Then the soil nail drillers fell behind, and we brought in an additional crew. This put extra pressure on Matt's team (CHM) to keep up with their PRECON installation. It's a pretty nifty system, however. PRECON's simplicity and flexibility helped keep the project moving."

PRECON flap over MEL-DRAIN being fitted around Nelson Stud center/soil nail screw before the base plate and anchor bolts are installed.

Installer for CHM Weatherguard details a Nelson Stud PRECON® tieback using BEM, a one-component, ready-anytime membrane. The PRECON system with BEM helped reduce detailing time on the D/FW rail station project by 35%-40%.

It all boils down to time and money – cost of installation – and ultimately, getting the D/FW rail station open on schedule or, in this case, ahead of schedule.

Asked if he'd suggest PRECON for similar future projects, Becerra says, "I absolutely would."



The PRECON system with BEM helped reduce detailing time on the D/FW rail station project by 35%-40%, helping finish the project ahead of schedule.

Photo courtesy of DART

'Ribbon-breaking' marks arrival of the first Dallas Area Rapid Transit (DART) train at Dallas/Fort Worth Airport rail station, August 18, 2014. DART Orange Line service over the final leg from Belt Line station to D/FW began 4 months ahead of schedule and the project came in under budget, thanks in part to employment of the PRECON waterproofing system from W. R. MEADOWS in construction of the station.

BUILDING ENVELOPE PRODUCTS

About W. R. MEADOWS

Since 1926, W. R. MEADOWS has been a leader in developing products that protect structures from moisture infiltration. From below-grade installations to rooftops and in-between, issue-specific products target and prevent potential, costly problems. Today, patented technologies enable more environmentally effective, efficient designs, and many of our products contribute LEED-certification "green" credits. With nine manufacturing facilities throughout the U.S. and Canada, the materials you need are within easy reach. For additional information, call 800.342.5976 or visit www.wrmeadows.com.

W. R. MEADOWS®
SEALTIGHT®
A Family Company Since 1926
QUALITY...SERVICE...INTEGRITY