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CARLISLE COATINGS & WATERPROOFING

PROJECT PROFILE

Toyota Headquarters – Plano, Texas

Toyota Headquarters Proves Excavation is Final Authority for Waterproofing Solutions

Bentonite clay is the go-to waterproofing solution for most below-grade slab applications in drought-prone Texas, where much of the land is above the water table. That was the original recommendation of design professionals who consulted on the new, state-of-the-art $350 million North American headquarters for Toyota Motor Company.

As expected, the 100-acre site located in Plano, Texas, was initially above the water table. But once below-grade excavation began on the 298,000 square foot site that would eventually comprise a basement and occupied space, contractors had second thoughts. The excavation hit limestone bedrock sitting below the water table. That, along with unusual spring deluges, caused the owner, consultant and general contractor to reconsider the bentonite recommendation.

“In Texas, we don’t always waterproof under slab, because we’re typically above the water table,” said Chuck Jahant, Vice President South Central Region at Alpha Insulation & Waterproofing. “We were not in the water table on this job, but once they dug the hole, the owner and consultant saw that there was enough water along the limestone rock that they wanted to waterproof not only the hole, but also under the floor slab.”

Alpha was asked to recommend a solution – a pre-applied sheet waterproofing membrane. “There was a lot of square feet to waterproof, and these large areas would be left exposed before pours,” Jahant said. “If the bentonite got wet or went under water we would have to deal with the issues of

Toyota Headquarters at a glance

Location:
Plano, Texas

Owner:
Toyota Motor Company

Architect:
Corgan

General Contractor:
Austin Commercial

Waterproofing Contractor:
Alpha Insulation & Waterproofing

Carlisle Coatings & Waterproofing Products:

- MiraPLY-H with SeamLOCK™ Technology
- CCW-500R
- CCW-500R Full System
- CCW MiraDRI 860
- CCW MiraDRAIN 6200
- Fire Resist Barritech VP
- CCW-703V
- CCW-711-90
- CCW LM-800XL

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it pre-activating before the pour. To us, that was a lot of unnecessary risk and potential additional money spent if we had to make repairs. It would just become a bad situation for all involved."

Jobsite visits by the owner, consultant, and general contractor convinced the team that a sheet-applied, below-grade membrane, combined with hot rubber on the decks, would be the best waterproofing solution.

To simplify the process, stakeholders wanted one manufacturer system with a 20-year warranty. Because of past experience using the Carlisle Coatings & Waterproofing (CCW) MiraPLY system and CCW-500R at Dallas Love Field, Alpha recommended using CCW products. After considering other options, decision makers eventually chose the CCW system.

"This was a fast track project and it was very important to the owner, general contractor and consultant that the manufacturer be involved and available for project technical support," Jahant said. "While all manufacturers have local representatives, CCW had a plant close-by in Wylie. That was important to the owner."

About the same time as product negotiations were going on, CCW launched MiraPLY-H with SeamLOCK™ Technology.

MiraPLY-H with SeamLOCK™ Technology is a self-adhering, dual membrane waterproofing system that fuses the time-tested waterproofing qualities of TPO and the self-sealing properties of butyl alloy adhesive. It is a fully-bonded 70-mil system that features a 45-mil thick, reinforced TPO sheet laminated to a 25-mil butyl adhesive coating. Its unique laminated construction creates a one-step compression seal gasket that combats shifting and soil separation from foundation walls and substrates.

HDPE-based sheet applied membranes were once the better mousetrap, Jahant said. That's not necessarily the case since CCW introduced MiraPLY-H with SeamLOCK™ Technology.

Jahant said the Toyota job was one of the first to use the new system and his crew can attest to the fact that it is tough and durable. The membrane went down easily over class 57 gravel without puncturing.

Seam adhesion was better also.

"Our guys thought adhesion was greatly enhanced and the membrane went down much faster," Jahant said. "It definitely has an aggressive bond at the laps. There was an area where the concrete workers had a problem with the pour and had to remove a section of the floor slab. Typically you don't see under the slab once it's installed. But we had to cut out an area to fix it. We could see the product was well-bonded to underside of the slab. That was impressive." *(See top right photo)*

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"Our guys like the more flexible membrane," Jahant said. "It's easier to maneuver and work with because it's not as stiff."

Jahant said one of the most remarkable things about the project was CCW's on-site presence.

"CCW had people keeping an eye on things, making sure our installation went smoothly," he said. "That was important to the owner and to us. We were always impressed with the reactive and timely tech service team. Not all manufacturers can provide the level of service that CCW does."

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