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Waterproofing Project Helps \$1.6 Billion Wynn Las Vegas

By Jack Innis

Las Vegas is in the middle of the desert. But you may not get that impression walking down the strip or visiting the newest hotels and casinos.

Water is everywhere!

In addition to the requisite swimming pools, there are lakes, moats, fountains, waterfalls, planters, and spas of every imaginable shape and size.

It seems every new casino strives to outbid the next when it comes to making Las Vegas green. The recently completed \$1.6 billion Wynn Las Vegas hotel and casino did just that — but only with the help of waterproofing.

Erected on land where the legendary Desert Inn once stood, the 42-story, curvi-

linear Wynn Las Vegas is sheathed in coppery bronze that reflects the gleaming desert sun. The centerpiece of the 2,846-room resort is a 150-foot-tall mountain with a five-story waterfall that cascades into a three-acre, man-made lake. Designed by Steve Wynn of Treasure Island, Mirage, and Bellagio fame, the project challenged the waterproofing industry to help create a resort based on watershapes.

The concept is simple — delight guests' senses by filling the visual space with water and foliage. But the waterproofing application was as difficult as beating a seasoned pro in no-limit hold 'em poker.

The scope and complexity of waterproofing the Wynn Las Vegas hotel is not apparent to guests at the luxury resort. From guarding underground concrete tunnels against a high water table to ensuring the integrity of planters with constant-drip irrigation systems, the coatings requirements put men and materials to the test.

Nuts About Planters

Above-grade waterproofing presented numerous challenges as well. Plans called for different types and sizes of guest suites — some of which contained pools, spas, and planters.

"We used miles of CCW MiraDRI 860 Sheet Membrane," said Weller. MiraDRI 860 is a self-adhering sheet membrane comprising 56 mils of rubberized asphalt laminated to a 4-mil polyethylene backing. It may be used either horizontally or vertically, and is typically found on below-grade foundation walls, tunnels, and parking decks. But it also works well for interior applications such as kitchens, bathrooms, and other areas in which moisture transfer is an issue.

Installation normally began seven to 14 days after the concrete was poured to allow time for curing. CCW Primer is typically applied with a roller, brush, or spray equipment. After a minimum of 30 minutes, CCW Primer is tacky and ready to accept the sheet membrane. Any areas not primed within 24 hours needed to be reprimed.

Since Las Vegas average humidity is less than 30%, certain plants in the arid desert climate require 'round the clock watering. That's a great deal of water moving unseen, and any leakage could result in costly damage.

"It was very important to field test the rubberized asphalt to make sure there was no leakage. You can imagine how important it is that nothing leaks above the casino or anywhere else."

Building Bridges

Like most other aspects of the coating business, the world of waterproofing is all about building relationships. These bridges to future business, founded on trust and forged with the test of time, are a lot like waterproofing. They must be built to last.

To that aim, CCW brought to the project a great lineup of waterproofing products as well the application connections to ensure the job was done correctly. Using trained teams who worked under the project's general contractor, CCW was able to provide a material and labor warranty to satisfy all involved parties. They also provided much more than that.

"What we did was to give them a confirmed price for the duration of the project," said Weller. CCW stuck with the quoted price throughout the multi-year project, meaning the owner did not have to factor in any unforeseen price increases.

"Fortunately, we didn't have any Hurricane Katrinas strike Las Vegas, and oil wasn't that expensive during the project," he said.

There was a risk on CCW's part that their costs would rise over the course of time in which the project was being completed, as indeed they have since oil prices began to skyrocket in 2004, but the firm-price guarantee made the owner feel more comfortable.

"We were not simply product suppliers, we were teammates in getting their project built," Weller said.

With the massive hotel project behind them, neither Weller nor Wynn are resting on laurels. Weller is continuing to form new relationships and build upon the old, and that includes seeking input about his company's performance in the Wynn project.

"I had lunch with the architect a few weeks ago, and asked Glen if he was happy with our performance," said Weller.

It takes confidence, and nerve, to ask that question in a situation where even the most minor mistake may turn out to be costly. Especially on a project the size of the Wynn Las Vegas, waterproofers should always expect a few minor leaks such as those caused by someone nicking a drainage board with a fork lift. But minor problems seem to go hand in hand with waterproofing and new construction. In the case of Wynn Las Vegas, none of the fixes were major ones.

"Glen said he was amazed at how much waterproofing we put in and how few difficulties occurred. That's a big complement in our industry."

So what lies in store for Las Vegas waterproofers? According to a recent *USA Today* article, Wynn is working on plans for a second luxury mega-casino in Las Vegas. The new \$1.4 billion



It seems every new casino strives to win big over the previous one when it comes to making Las Vegas green. This one-upmanship is sure to increase the size and complexity of waterproofing projects to come.

resort, called Encore, is expected to take advantage of the booming popularity of Las Vegas, now visited by more than 35 million tourists a year.

While the 2,300-room hotel's final design has not yet been made public, it will no doubt make a splash in the dry Nevada desert with a unique combination of pools, lakes, fountains, waterfalls, planters, and spas of every size and shape imaginable.

Such intricate and elegant work to turn a seemingly barren desert into a lush oasis will probably involve a great deal of waterproofing, and will once again challenge professionals — from designers to consultants to installers — to trump their own previous best efforts. **CP**



Many guest suites — such as those above with balconies — contained pools, spas, and planters. Coatings professionals literally used miles of Carlisle CCW MiraDRI 860 Sheet Membrane, a self-adhering product comprising 56 mils of rubberized asphalt laminated to a 4-mil polyethylene backing. Installation with roller, brush, or spray equipment typically began 7 to 14 days after the concrete was poured to allow time for curing. Field testing ensured nothing leaked above the casino or anywhere else.

How High's the Water?

Besides fire, water is likely the most damaging force encountered in nature. That was certainly on the mind of waterproofers when hotel construction began in 2002. When the project was completed and the hotel opened in April, 2005, they had created one of the largest and most complicated waterproofing jobs this side of Hoover Dam.

Ron Weller, a 30-year waterproofing veteran who represents Section 7 Marketing and Carlisle Coating and Waterproofing (CCW), found himself in the middle of the Wynn Las Vegas project. To bring it all together, he relied on his long relationship with Wynn's lead architect Glen Ashworth, his extensive knowledge of waterproofing materials, and his familiarity with application techniques.



JOB at a GLANCE

WATERPROOFING LAS VEGAS HOTEL

PROJECT:

Install waterproofing under numerous planters, lakes, swimming pools, spas, and underground tunnels in \$1.6 billion Wynn Las Vegas hotel

WATERPROOFING CONTRACTORS:

Technicoat
6879 Speedway Blvd. # V109
Las Vegas, NV 89118
(702) 364-1957

Eberhard Southwest Roofing
3995 W. Dewey Drive
Las Vegas, NV 89118
(702) 873-2212

PRIME CLIENT:

Wynn Las Vegas
3131 Las Vegas Blvd. South
Las Vegas, NV 89109
(702) 770-7000
www.wynnlasvegas.com

SUBSTRATE:

Newly poured concrete above and below grade

SUBSTRATE CONDITION:

Brand new

SIZE:

Numerous projects, small and large, to form a waterscape atmosphere within a 2,846-room resort

DURATION:

Four year project

UNUSUAL FACTORS:

- High water table in desert affected below-grade concrete waterproofing
- Manmade 5-acre lake and other large water-based focal points required intense waterproofing efforts
- Numerous planters, spas, and other features above casino and hotel rooms required drainage and waterproofing
- Waterproofing and roofing meetings often were very well attended

MATERIALS/PROCESS:

- Waterproof manmade lake and swimming pools using CCW's BarriCOAT-R, a roller-applied, water based, asphalt emulsion
- Waterproof all underground tunnel exterior surfaces with CCW MiraCLAY, a waterproof bentonite clay membrane, then backfill with dirt.
- Prime planters and other water-containment systems before applying CCW MiraDRAIN aggregate free drainage boards on horizontal and vertical surfaces

SAFETY CONSIDERATIONS:

- Construction site a veritable "ant hill" of workers and machines forcing constant attention to stay out of the way of other trades
- Ladders and scaffolds required attention to equipment inspections and fall protection equipment and procedures
- Heat fatigue and sun exposure were constant concerns

