

Pool & Recreational Shotcrete Corner

A Shotcrete Success Story

By Skip Phillips

This La Jolla, CA, project was designed over a 2-year time frame with the collaboration of Island Architects, Bruce Rudd Landscape Architecture, and Questar Pools. As is the case on any large project, mutual respect and talented participants were critical to resolve the type of details necessary to meet the client's very high expectations.

The foundation system (piers and grade beams) were installed early in the home construction process. Questar Pools was then retained to expand its role from designer to primary contractor on the pool, spa, and three entry water features. Compliance with all the necessary building, soils, and special inspection criteria was ensured. The shotcrete used in the project also met or exceeded the 4000 psi (27.6 MPa) ASA/American Concrete Institute (ACI) compressive strength criteria. These density-driven criteria are extremely important based on the water flow and water-in-transit

designs. Liquid movement in, around, and over concrete vessels is susceptible to leakage or departure via joints or vertical transitions in the concrete. Monolithic, low-porosity, high-strength concrete installed via the shotcrete process is the only way to ensure that water-in-transit loss is minimized to evaporation only. This was the foundation for the project's design and it had to be implemented correctly to succeed with the remainder of the project.

The pool vessel is elevated 4 in. (102 mm) above the pool deck and veneered in labradorite on the exposed and vanishing edge elevation. There are two vanishing edge details on the pool: the house-side elevation and a more traditional vanishing edge with an attached surge tank on the descending slope. The spa is a perimeter overflow with a waterline 1 in. (25 mm) above the pool's level. It is backed up by a limestone wall with a custom bronze feature bowl.

The pool's elevation and edge details provided the desired visibility of the designed line of sight from both the lower- and second-floor viewing locations. The black pearl Pebble Tec surface finish, along with a sophisticated mechanical system, ensures a highly reflective surface absent of turbulence.

The front water features integrate water both in and outside the home, with a "Lautner" style slot overflow detail. The rainfall effect, lit with fiber optics, provides a stunning preview to the home and waterscape beyond.

The combination of the contractor's rendering abilities and the flexibility of the shotcrete process



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were especially significant components on this project. Drawing skills have become a lost art in the pool industry with the ever-increasing use of computers. The ability to sketch details by hand during both the design and execution phases provided an excellent communication tool for the construction team. Drawing a perspective, cross-sectional sketch allowed the shotcrete crew to actually see how the shot gutter detail met up with the surge trough. This sectional view was not understood by the implementers until the sketch was done on site, despite having this detail in an architectural CAD format. The flexibility of the shotcrete process provided tremendous latitude in the finite shell tolerance modifications.

Questar Pools prefers the wet-mix process and acknowledges the importance of ACI Nozzleman Certification. The use of ASA minimum requirements for compressive values and the insistence

that the applicator be properly trained and certified are critical items for Questar Pools and its clients. The wet-mix shotcrete process and its increasing popularity have been a huge asset to Questar Pools and the pool, spa, and water feature industry as a whole.



Skip Phillips is the President of Questar Pools and Spas in Escondido, CA, and is the Cofounder of Genesis 3. Phillips currently serves on the Board of Directors for the Pool Safety Alliance and Sonar-Guard. In 1997, 1998, and 2000, Questar Pools and Spas was chosen as Industry's Choice—Top 50 Builders. Genesis 3 is an international forum specializing in education for pool professionals. Since 1998, Genesis 3 has attracted some 500 participants and is dedicated to higher standards in watershape design and construction.