

Exterior Insulation Finish System (EIFS)



ReVISION Home

Las Vegas, Nevada

Dryvit

Outsulation RMD System

Aiming for and achieving the energy efficiency levels needed to reach net-zero-energy performance in a home requires first that the building's thermal envelope be designed and built to minimize the required capacity and energy requirements of heating and cooling equipment. Climate-specific super insulated walls with outstanding air-sealing and weather-resistive capabilities are key. When applying these requirements to a home retrofit the task becomes even more difficult as far fewer options exist within the context of an existing building. In the case of the ReVision House, we add yet another obstacle; the desire to improve the thermal envelope from the exterior, leaving the interior finish substantially intact.

Before reviewing options for potential wall insulation solutions, the project team used EnergyGauge USA modeling software to determine the range of optimal insulation values needed to reach our performance goal. Once the needed R-values were identified, the insulation choices became clearer. With only a 3-1/2" space to work with in the 2 x 4, walls the amount of potential cavity fill insulation is limited. The limited cavity space and the requirement for excellent air-sealing led the team to select open-cell spray polyurethane foam, which at R-3.9 per inch, yields a nominal R-value of 13.6. As this R-value is lower than our modeled optimal value, addi-

tional supplemental insulation is needed. Since it can't be placed toward the interior of the wall assembly (where interior finishes are to remain), an exterior insulated solution was chosen: in this case Dryvit's exterior-insulation-finish and system (EIFS), the Outsulation ® RMD System.



Dryvit Outsulation RMD is an ideal product for this application for multiple reasons. The ReVision Home, originally sided in traditional cement stucco, is iconic in design and it was the intent of the project team to maintain the original appearance following the deep-



Dryvit - Outsulation System

energy retrofit. The Dryvit system uses a multi-layer application process culminating with an acrylic-based finish coat with the appearance of traditional stucco. There are numerous other textures and colors available with a Dryvit system, but we wanted the ReVISION House to mimic the original removed stucco. Applied over 2" of expanded polystyrene insulation (EPS), the Dryvit system provides an additional R-8 to the wall assembly (for a total R-value of 21.6), and a continuous thermal break between the exterior and the cavity-insulated wall assembly is achieved.



Unlike the removed traditional stucco, the Dryvit is installed over structural sheathing (Las Vegas is in a high-risk seismic zone). A weather-resistive barrier and drainage plane (Tyvek ® Stucco-Wrap®) is then installed, followed by the two-inch EPS insulation. A reinforced base coat is applied over the EPS, and finally the finish is applied. The result is a

thermally efficient exterior wall with the performance level needed to meet our ZEH goal, and true stucco appearance compatible with our iconic home.



Another Dryvit product was also used for one more task at the ReVISION house. In a strategy to reduce the cooling load, windows that did not provide needed day-lighting or views to the exterior were eliminated. This includes the front (west facing) clerestory glass in the master bedroom. Since the trapezoidal clerestory glass is critical to the overall appearance of the home, a solution was needed which would hold true to the home's original form, but provide substantially better thermal performance than the removed windows. The solution? Dryvit's Reflectit™ pearlescent coating. Applied to a finely textured surface, Reflectit provides a smooth, glossy, polished surface. At the removed windows, the voids were infilled to match the adjacent walls (including insulation), and finished with contrasting panels of Reflectit in the same pattern as the removed glass.

