COVER PAGE – Drone for Applying Multifunctional Control Layers

Automated Aerial Robotic (Drone) System for Depositing and Inspecting an Air-Sealing, Moisture-Managing, and Energy Storing Building Envelope Material

EXECUTIVE SUMMARY:

Apellix and Techstyle Materials will utilize the Apellix X8 Spray Painting Drone (SPB) system to automate and standardize the deposition and inspection of air sealing and moisture control materials in re-siding retrofit projects. The software controlled drone flies tethered (for power and material) in a raster pattern at a controlled distance from the exterior surface while mapping and simultaneously sensing and inspecting. When the inspection indicates more information is required, the system can make contact with the surface and gather non-destructive testing data. The robotic system will spray a deposit of a novel primer and topcoat coating system. The multifunctional coating provides a seamless air barrier for thermal efficiency, water-repellency and directional water vapor permeance for moisture durability, and excellent UV stability.

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