

# DRONES FOR APPLYING MULTIFUNCTIONAL CONTROL LAYERS

## THE NEED/CHALLENGE

Several million homes and buildings are re-sided each year, providing an opportunity to significantly increase the energy efficiency and durability of a building by installing a continuous air and weather barrier. However, current construction practices are time-consuming, costly, dangerous to workers, often *ad hoc*, and prone to installation defects.

## THE TEAM

**Apellix and Techstyle Materials** have teamed up to combine advanced building envelope material technology with an advanced aerial robotic sensing, mapping and tethered autonomous spray application system.



## PROPOSED SOLUTION

Applying Techstyle materials low-cost sprayable coating to existing building envelopes significantly improves moisture regulation and energy efficiency. Apellix's aerial robotic systems will sense and map energy loss via thermal imaging and then apply Techstyle's coatings with conventional airless spray paint system via their tethered Spray Painting Done.

## BUSINESS PLAN

The initial target is refrigerated warehouses. With just two workers the Apellix system can paint and inspect even the largest cold storage warehouses (~500,000 ft<sup>2</sup>) in a single day, saving 85-95% of the costs associated with traditional labor and maintenance alone. The spray coating material saves over 20 million kilowatts per ~800,000 ft<sup>2</sup> of exterior refrigerated warehouse walls coated. One owner, Lineage, has over 32m FT<sup>2</sup> of space and spends almost \$2B annually to cool it. A 13% savings in energy costs translated to a savings of \$256m. And this is just 1 company in 1 vertical in the \$37B annual painting contractor's market. By leasing our systems at \$240k per year we can significantly increase paint contractor's margins making this attractive to contractors and building owners alike.

**APELLIX**

 **Techstyle**  
MATERIALS