

Case Study - Deaton Manages Mega Design and Build for SkyVenture

The Client: SkyVenture, LLC

SkyVenture is a state-of-the-art skydiving wind tunnel designed for the general public. SkyVenture completely immerses visitors in the world of high adventure skydiving, without ever having to pack a parachute, pull a ripcord, or jump out of a perfectly good airplane. No experience is necessary. Virtually anyone can fly.

The Challenge: Design & Build a Recirculating Wind Tunnel

Design and engineer a 1 mega-watt, vertical, recirculating wind tunnel. SkyVenture sells worldwide and the design had to meet local, state, federal and international standards. The design concept had to be modular so that it could be fabricated in the United States and economically shipped anywhere in the world for installation. Deaton Engineering also needed to interact with a diverse team of fabricators, control system and structural engineers, architects, aerodynamicists and owner groups.



The Solution: State-of-the-Art Sky Diving Machine

Deaton Engineering designed and engineered this mega machine entirely in SolidWorks. DEI provided program management and documentation services, and during construction managed component fabrication and part procurement. We created manufacturing drawings and sequenced assembly instructions to ensure that the machine could be assembled anywhere in the world. We were able to virtually load our modular assemblies into shipping containers. The budget and schedule did not allow for prototypes so finite element analysis (FEA) was implemented to optimize and validate the design.

Engineering Highlights:

- 80 foot tall mega machine, 4 turbo prop fans generating 1 mega-watt of power
- One of the largest SolidWorks parametric designs ever attempted
- Developed manufacturing drawings and sequenced assembly instructions
- Delivered design that was easy to customize for worldwide sales
- Currently engineering and designing a third wind tunnel model

