Paulus, Sokolowski and Sartor, PC

Architecture | Engineering | Environmental

SERVICES

➤ Architecture | Interior Design
➤ Engineering:
  • Civil | Survey | GIS
  • Structural
  • Mech/Elec
➤ Environmental Services
➤ Energy Services

MARKETS

➤ Education
➤ Energy & Utility
➤ Healthcare
➤ Public Works
➤ Real Estate
➤ Science & Technology (UAM)

HQ: Warren NJ | Seven Regional Offices | 260 Staff
Single Source for Fully Integrated Design & Engineering
Introduction

Overview

- UAM Facility Types
- Design Team | Services
- Construction Team | Services
- Planning Points
- Vertiport Approvals
- Vertiport Architecture
- Vertiport Engineering
- Vertiport High Energy Electrical
- Summary
UAM Facility Types

Categories

- eVTOL Vertiports
- Site-based | Airport-based
- Aircraft MRO Hangars
- R&D | Manufacturing Facilities
- Warehouse | Supply | Distribution Centers
- City Transportation Hubs
- Fleet Operations | Training Centers
- Water-based Pier & Platform Facilities
- First Responders’ Base | Municipal Support Services
- Fixed Base Operations (FBO) | Pilot and Flight Services
Design Team Composition

The Architects And Engineers

- Architecture | Interior Design
- Civil Engineering | Land Planning
- Structural Engineering
- Mechanical | Electrical Engineering
- Environmental Services

Consultants

- Aviation Infrastructure
- Acoustical Engineering
- Aviation Equipment Planning
- Cost Estimating
- Food Service | Retail | Conference | Others
Design Team Services

Fundamentals
- Evaluate Land & Building Use
- Assess Existing Conditions
- Develop Client Program
- Prepare Project Budget
- Assess Regulations
- Develop Project Schedule

Parameters
- Define & Organize Project
- Concept | Plan | Design | Document
- Construction | Occupancy
Construction Team Composition

The Builders
- General Contractors | Construction Managers
- Pre-design | Pre-Construction | Project Delivery Services
- Owner’s Representatives
- Cost Estimators | Project Managers

Support Team
- Subcontractors
- Suppliers
- Fabricators
- Equipment Manufacturers

Team Interface
- Collaborate w/ Client & Design Team
Planning Points
Urban Air Mobility

- Transformational
- Need | Demand | Time Savings | Affordability
- Safe & Reliable | Low Noise
- Requires Public Acceptance
- Serves the Greater Public Benefit
- Urban Integration | Smart City Interface
- Local Governmental Approvals
- Facility Location: Free of Restrictions, Obstacles, Hazards
- Good Neighbor Policy
- Tempo of Operations: Flights Ops, Grade Level
- Integrate High-energy Electrical
Required Vertiport Approvals

Site & Building (Local)

- Planning Board | Zoning Board | Building Use Approval
- Construction Permits: Building, Fire, Mechanical, Electrical

Aviation

- State DOT | Bureau of Aeronautics | County
- Airport Terminal Design: FAA AC 150/5360 Series
- Airport Certification: FAA Part 139
- Commuter, On-demand Operations: FAA Part 135
- Pilot Training: FAA Part 61, 141
- Airspace: FAA Part 91 Operating and Part 70 Series Designation
- Heliport Standards Guide – Fire Safety: NFPA 418
Vertiport Architecture

Architecture’s Response

Our Fundamental Task:
- Understand | Conceptualize | Create Thru Design
- Form and Space | Reflective Of Its Use
- Interior Environment Creates the Exterior

An Aerial Transportation Hub:
- Vertical Extension of Human Mobility
- Societal Transportation Centers
- Serves the Populace and the Public Benefit

Skyport Considerations:
- Accommodate Public - Curbside Thru Facility
- Security | Operational Tempo | Emergencies
Vertiport Engineering

**Plumbing**
- Domestic Water
- Sanitary Waste
- Sprinkler Fire Protection

**Mechanical**
- Heating, Ventilating and Air Conditioning
- Energy Management / Efficiency

**Electrical**
- General Facility Power, Lighting, Systems

**Lease Space**
- Shared Metering - Owner & Tenant
- Utility Extensions Thru Building
Vertiport High-Energy Electrical

New High Energy Service

- Electrified Vehicles | Systems Expansion
- Assess Grid Infrastructure | Availability
- Incoming Service Sized For Demand
- Aircraft Power Requirements
- Cost Allocations: Utility vs Owner
- Internal Distribution & Routing
- Managed Charging vs On-demand Tempo
- Goal A Sustainable Environment, Zero Emissions
Summary

- UAM Facility Types
- Design Team
- Team Services
- Construction Team
- UAM Architecture
- Vertiport Approvals
- Vertiport Architecture
- Vertiport Engineering
- Facility High Energy Electrical
“LOGIC WILL GET YOU FROM A TO B. IMAGINATION WILL TAKE YOU EVERYWHERE”

- ALBERT EINSTEIN

Urban Air Mobility

SOONER THAN YOU THINK

Thank You