A Leading Architecture and Design Firm

85+ years in business and growing
800+ employees across 14 offices
92% repeat client business

Aviation    Commercial    Data Centers    Education    Healthcare    Interiors
Experience — Signature Projects

#3
US Aviation Architect
BD+C 2022 Giants

#2
Transportation Interior Design Firm
Interior Design Magazine Top 100 Giants

#8
Architecture Firm
BD+C 2022 Giants

1. US Data Centers Architect
   BD+C 2021 Giants

LGA Delta Airlines New Terminal C

PHX T4 S1 Terminal Concourse

CLT Airport Dimensions Lounge

ORD Global Terminal
elevating data-driven design research around the human experience
How do we design for the future?

…and what drives our behaviors and decision making?
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WELLNESS
IDENTITY
MANAGEMENT
FOOD INNOVATIONS
AIRPORT OPERATED
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SERVICES
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EFFICIENT QUEUE
MANAGEMENT
SELF-
SERVICE
TICKETING HALL
SELF-
SERVICE
IN
CONCESSIONS
USER ENGAGEMENT
SERVICES
An airport masterplan provides a road map for efficiently **meeting aviation demand** through the foreseeable future while **preserving the flexibility necessary to respond to changing industry conditions and user needs**
Airports require the design and operation of runways, taxiways, aprons, and terminals.

Similar infrastructure will be required on the moon for landing and launching spacecraft, storing and handling equipment and supplies, and accommodating crew members.
Pre-Planning // Determining Capacity

**VISIONING**
Aligning stakeholders helps to:
- Identify objectives
- Determine scope and scale
- Establish financial thresholds

**INVENTORY OF EXISTING CONDITIONS**
Examining the proposed site helps to:
- Identify existing operations (if any)
- Determine site constraints and local construction techniques
- Define terrain, topography, altitude, elevation, climate and seasonal patterns, wind flow, and glare – all of which can determine the shape, direction, and design of the development

**FORCAST OF AVIATION DEMAND**
Reviewing daily flight schedules, type of aircraft, and number of passengers helps to determine:
- Annual Demand
- Seasonal Demand
- Design Day Flight Schedule
- Peak Hour
- Fleet Mix + Design Aircraft
Pre-Planning // Preparing for Future Aircraft Mix

- Cap net emissions from 2020 through carbon neutral growth
- Increasing testing and use of SAF in medium and long-haul aircraft
- ZeroAvia ZA600 zero-emission regional jet
- Boeing Full-Scale Demonstrator X-Plane to test new green technologies
- Full electric aircraft with 125-mile range
- Airbus A350 XWB-1000 delivers 4,000 new aircraft
- Connect Airlines converts 75 ATR 72-600 regional aircraft to hydrogen powertrains
- Full electric aircraft with 250-mile range
- Full electric aircraft with 190-mile range
- Boom Supersonic Overture aims to begin commercial flights
- Lockheed Martin Hypersonic Aircraft
- Boeing Transonic Truss-Braced Wing
- Airbus ZEROe Hydrogen Aircraft
Establishing Design Envelope

PROGRAM REQUIREMENTS
Establish facility requirements for:
- Airside / Airfield
- Terminal Building
- Ground Access
- Hangar Development
- Landside
- Passenger Parking
- Ground Transportation
- Cargo, Maintenance, and GSE
Line of Sight //
Virtual Control Tower
10hrs
BATTERY LIFE WITH SEISMIC POWERED CLOTHING FOR RAMP WORKER SHIFTS

53%
REDUCTION IN PUSH-BACK RELATED DELAYS

2024
AUTONOMOUS LUGGAGE DOLLIES WILL BE UNLOADING AIRCRAFT AT LONDON HEATHROW
TRANSPORTATION

Aviation master planning includes designing and managing transportation systems for moving people and goods around the site.

This will translate to designing and managing space vehicles and lunar rovers, as well as other forms of transportation.
Corgan utilizes evidence-based design and historical and current data mining to help predict the behavior characteristics that should be integrated into the programming and design of our terminal facilities.
The V2X Parking Garage
An ecosystem change driven by *new user behavior + adoption*

2035

The largest automotive markets will be electric, with EVs accounting for 75% of passenger car sales globally by 2030.
The crucial component in the success of vertical mobility is the **infrastructure** to take-off, land, charge, and service passenger drones.
SAFETY + SECURITY
Designing and managing valuable security systems and security protocols is key to ensuring a safe terminal airside and travel for passengers and crew members alike. Ensuring the safety and security of crew members and equipment is critical for successful lunar exploration and development.

- 6,542 Firearms found by TSA officers at security checkpoints across the US in 2022 (TSA.gov)
- 4.9m Carry-on bags screened for explosives every day in the U.S. (TSA.gov)
- All 313 CT scanning systems to be installed across the U.S. by November 2023 (TSA.gov)
- 60% Travelers agree to share data to cut down on wait times and queues (The Airport Delight Report OAG)
- Business Travelers prefer automation to human customer service at security (The Airport Delight Report OAG)
ENVIRONMENTAL PLANNING

Just as it is critical for airports to be designed and managed to minimize environmental impact, a moonbase development must also be planned to minimize the impact on the lunar environment.
On-Site Carbon Reduction With Vertical Farming

Based on American Airlines flights that are most likely to have food service provided, we identified efficiencies and by using publicly available data, estimated how much carbon can be reduced on-site at DFW.

**Food Miles Reduction**
- 212,000 miles
  - 142.05 REFRIGERATED TRUCKS
  - 1.49K AVG DISTANCE TRAVELED (MILES)

**On-site CO₂ reduction**
- 993,440 lbs CO₂
  - 142.05 REFRIGERATED TRUCKS
  - 426.14K LBS LEAFY GREENS

*The model assumes that 50% of passengers order meals, and each meal uses 1/2 a head of lettuce. It also assumes a return to pre-pandemic catering needs.

These numbers are calculated on an annual basis.
Aviation master planning must consider evolving and emerging technologies across all aspects of the design, including incorporating A.I., modular construction techniques, robotics, communication systems, and renewable energy systems.
38% U.S. AIRPORTS PLANNING ON DEPLOYING AI FOR CUSTOMIZED MARKETING IN 2023

75% OF THE GLOBAL POPULATION WILL BE FREQUENT AR USERS BY 2025

2in1 CAFÉ X ROBOTIC COFFEE BAR KIOSK MAKES TWO DRINKS IN UNDER ONE MINUTE
GOOD MORNING, SLOANE

Looks like rain tomorrow in Seattle. ☁️
If you need a jacket, there's a boutique at A4.

DESTINATION
SEATTLE

FLIGHT
DL 2540

GATE
A21

STATUS
ON TIME
PASSENGER EXPERIENCE

Creating an airport that is convenient, safe, efficient, intuitive, and keeps the users’ needs at the center of decision-making, is essential. Experiential design not only leads to improved passenger satisfaction but can strategically position an airport for long term success.

Placing the user at the center of design, and planning for their safety, mental and physical health, needs, and preferences is imperative for lunar construction.
The next Transportation Revolution is here.

From eVTOLs to drone delivery; from Boom Supersonic to Space Perspective; airspace is evolving. Commercial space travel is the next chapter of that evolution.
The birth of a commercial space industry will introduce the average person to harsh environments traditionally reserved for highly trained astronauts.

- Zero-Gravity Adjustment
- The Overview Effect
- The Space Fogs
- Isolation
Getting **outside perspectives** is the most powerful tool in the innovation process.

“I don’t see as many [barriers] once space travel is available, I other than the environment aspect. We know so much more about how to be careful stewards of our environment now, and I hope that the people leading this charge can take that into consideration.”

“[Technology] that actually has a purpose is what I am interested in. There is nothing I dislike more than how disposable things have become. It’s about the new thing that they drop when the newer thing comes out.”

“The only thing I would say is difficult is the price. I am all for exploring space, I am a wanderer at heart. The only thing that will hold me back is the price of everything.”
Experiential Data Gathering

Empathize with users by leveraging behavioral sciences tools

Retina Scanning Goggles

Light Therapy Tools

Gerontological Suit

Scentograph™
Olfactory Architecture™ Strategy

- **EXECUTIVE DIRECTOR OF DESIGN (CONFIDENTIAL CLIENT)**

1% TOUCH
2% HEAR
5% SEE
15% TASTE
35% SMELL
15% TASTE

- **EUCALYPTUS**
- **GRAPEFRUIT**

I feel like I am working with Scientists!
- EXECUTIVE DIRECTOR OF DESIGN (CONFIDENTIAL CLIENT)
Thank you!