

Gresham Smith

Genuine Ingenuity



Gresham Smith

We are a full-service architecture, engineering and design practice that provides creative solutions while genuinely caring for each other, our clients, and our communities.

1,200+
professionals
in our firm

57
years in
business

91%
repeat customer
business rate

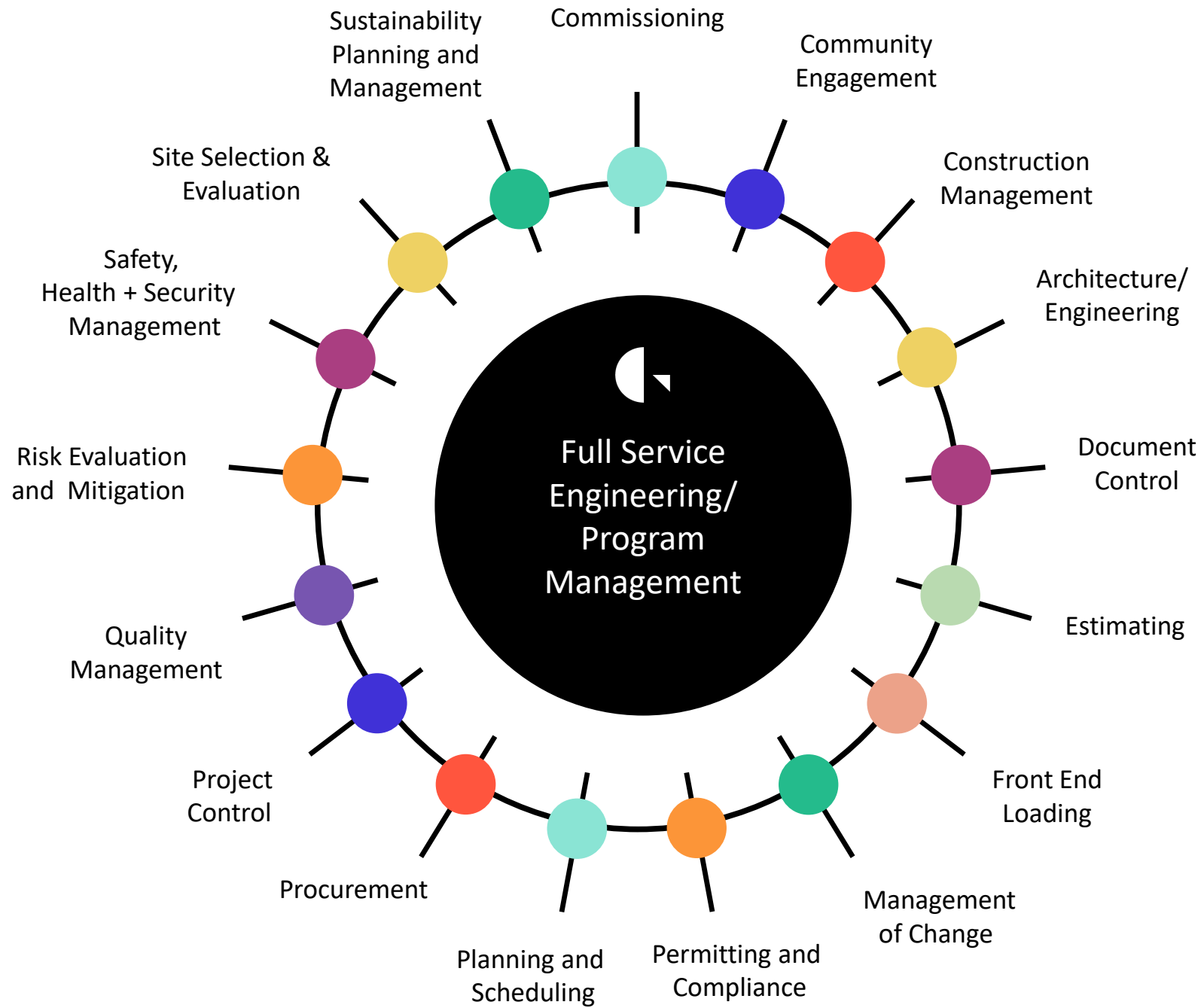
26
Office Locations

\$328M
2023 Company
Gross Revenue

\$8B
Represented in
Construction







Industrial Experience + Rank

- Automotive
- Battery Manufacturing
- Advanced Manufacturing
- Aerospace + Defense
- Aluminum/Steel
- Consumer Products
- Data Centers/Mission Critical
- FDA-Regulated Products
- Food + Beverage
- Tire + Rubber

#7

Top Manufacturing
E/A Firms

- ENR Top 500, 2024

#11

Top Industrial
Sector EA Firms

- BD+C 2024

#45

Top 300
Architectural Firms

- Architectural Record 2024

#79

Top 500
Design Firms

- ENR 2024





DS Electera



Mercedes-Benz



Bridgestone Americas, Inc.



LG Electronics

Battery Supply Chain

Upstream



Raw Materials

- Lithium
- Cobalt
- Nickel
- Graphite



Midstream



Materials Processing

- Cathode Powder
- Anode Powder
- Separator Sheet
- Electrolyte

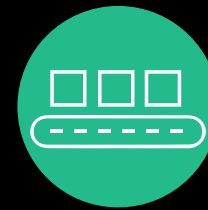


Cell Manufacturing

- Battery Plants

Downstream

Pack Manufacturing



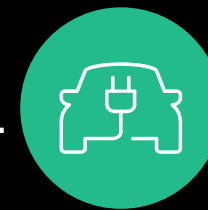
Aviation



Defense



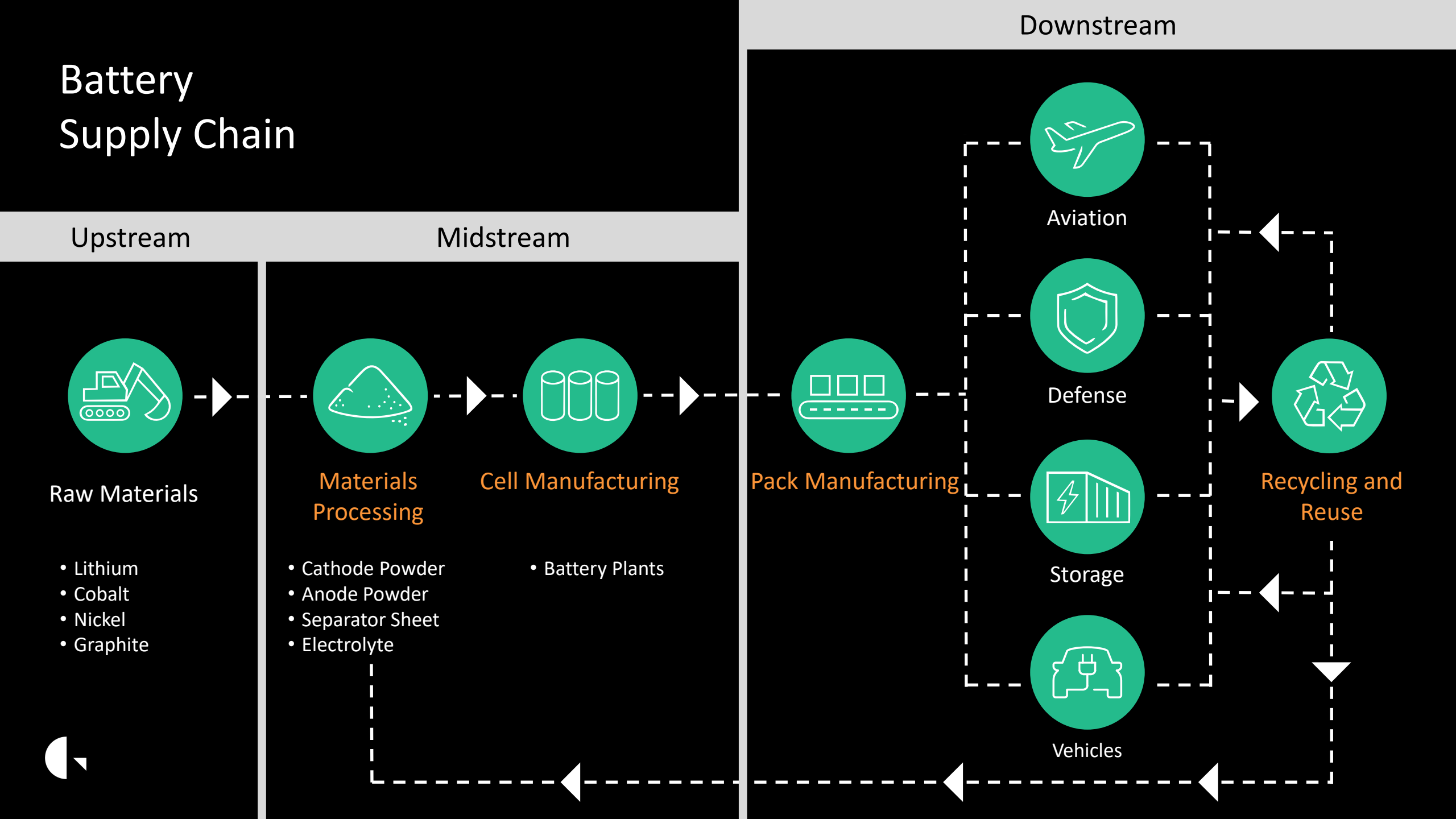
Storage



Vehicles



Recycling and Reuse



Battery Manufacturing

35+M

Square Feet of Battery
Manufacturing Experience

<1%RH

Dry Room Design
Expertise

430+GWh

Design and/or CX

Expertise

- Dry Room Design
- Clean Room Design
- Substations
- Bulk Material Handling
- Hazardous Materials
- Fire Protection Systems
- Testing and Recycling
- Commissioning

Process Utilities and Flow

- Mixing
- Coating
- Cutting
- Assembly
- Electrolyte Full
- Formation
- Aging
- Module and Pack





*Ultium Cells, EV Battery Manufacturing Plant, Phase 1, Warren, OH
2,800,000 sf | 156 acres | 30 GWH Annual Capacity | \$2.3B Investment*



*Ultium Cells, EV Battery Manufacturing Plant, Phase 2, Spring Hill, TN
2,800,000 sf | 156 acres | 30 GWH Annual Capacity | \$2.3B Investment*



*Honda/LGES, New Li Ion Battery Plant, Jeffersonville, OH
4,000,000 sf | 87 acres | 40 GWH Annual Capacity | \$4.4B Investment*



*NextStar (LGES/Stellantis), EV Battery Manufacturing Plant, Windsor, Ontario
4,500,000 sf | 250 acres | 45 GWH Annual Capacity | \$4.1B Investment*



*Envision AESC, EV Battery Manufacturing Facility, Bowling Green, KY
1,500,000 sf | 500 acres | 30 GWH Annual Capacity | \$2B Investment*



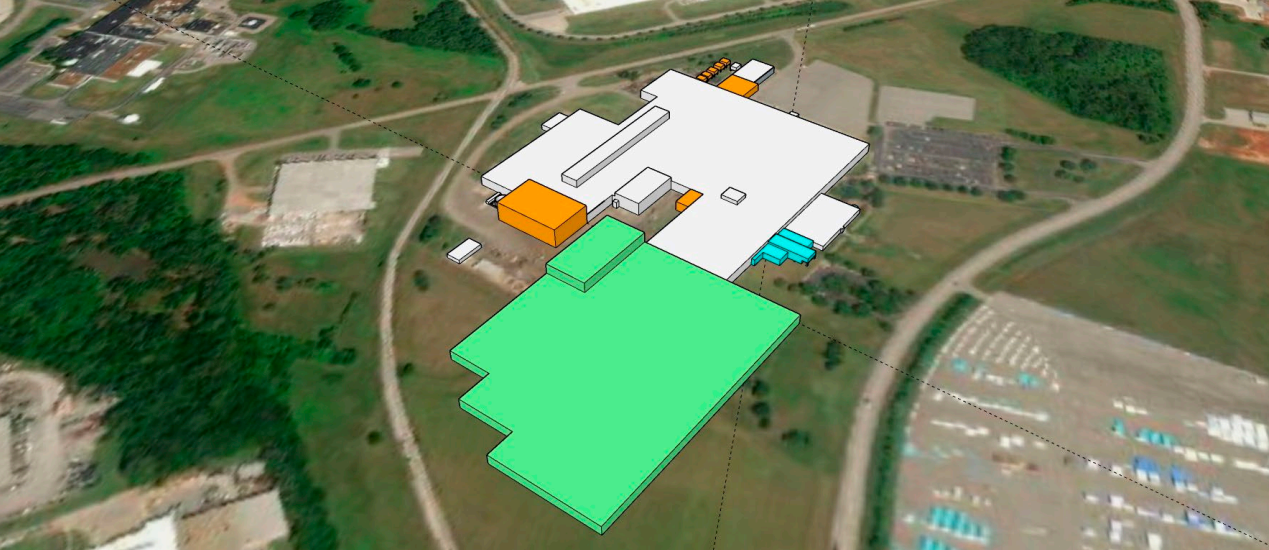
*Dusan Electera, Electrolyte Manufacturing Plant, Shelbyville, TN
200,000 sf | ISO 8 Clean Room(s)*



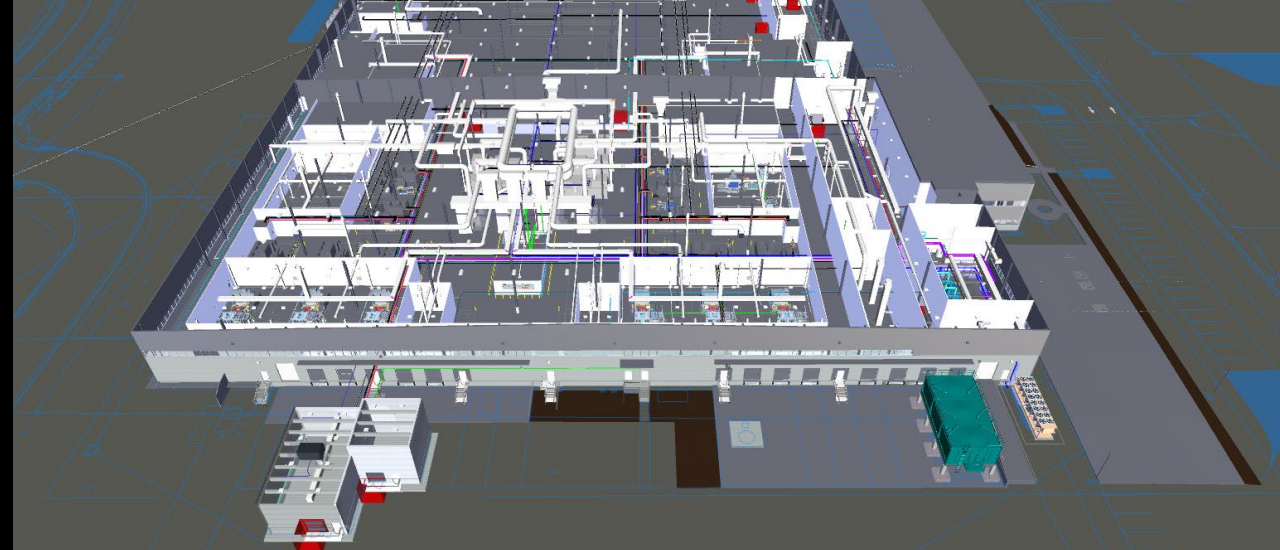
*LGES-Hyundai Motor - HMC JV EV Battery Plant, Gllabell, GA
2,400,000 SF | 130 Acres | 27.5 GWH Annual Capacity | \$4.3B Investment*



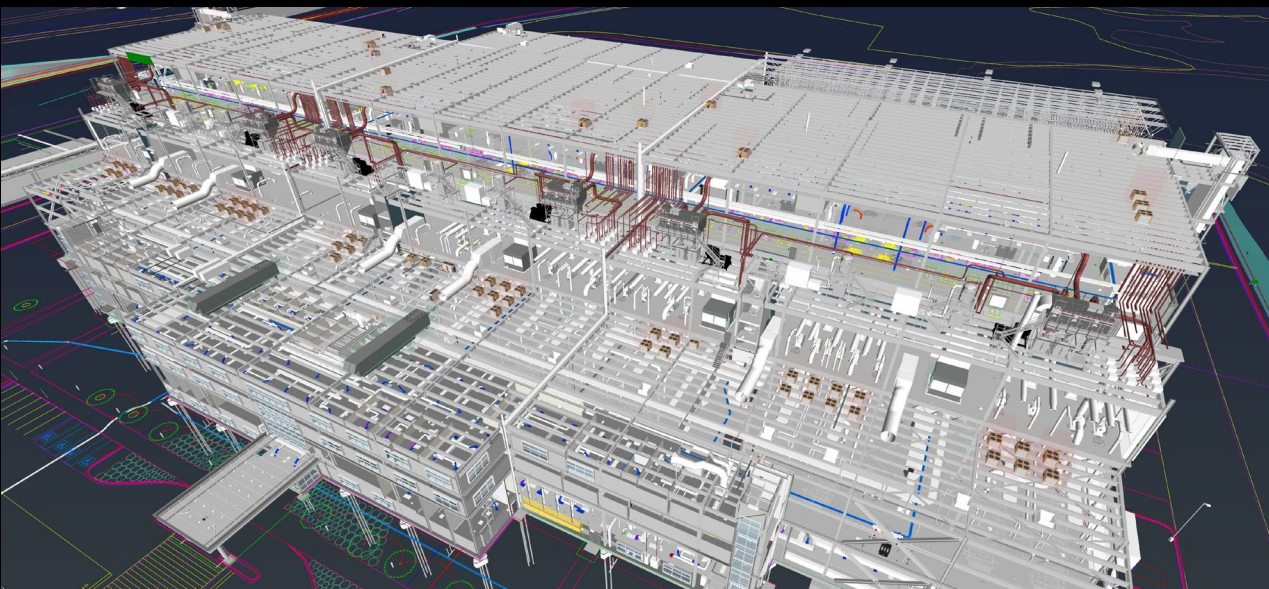
*BlueOval SK - EV Battery Manufacturing Plant, Commissioning, Glendale, KY
8,000,000 sf | 86 GWh Phase 1 & 2 Annual Capacity | \$6B Investment*



*Confidential Client, Battery Manufacturing Plant
900,000 sf | 87 acres | 8 GWH Annual Capacity | \$220M Investment*



*Confidential Client, New Battery Anode Lithiation Facility
DOE Funding | H3 Occupancy | LEED Gold*



*Confidential Client, Active Cathode Material Manufacturing
1,800,000 SF Phase 1 & 2 | 3.2 B Investment*



*Project Amplify, EV Battery Manufacturing Plant (LFP) | Marshall Co. Mississippi
2,000,000 sf | 21 GWh Phase 1 Annual Capacity | Commercial Vehicles*

Return on Investment

Example:

Water Reuse at EV Battery Facilities



Condensate Collection – Direct Costs		
Cost Type	Cost Category	
Capital Costs	Mechanical	\$1,592,000
	Electrical	\$123,000
	Insurance, Overhead & Profit	\$376,000
	Engineering	\$262,000
Capital Cost Subtotal		\$2,387,000
Annual Cost	Power	\$12,000
Annual Savings	Water	\$40,000
	Sewer	\$43,000
Net Annual Savings		+\$71,000

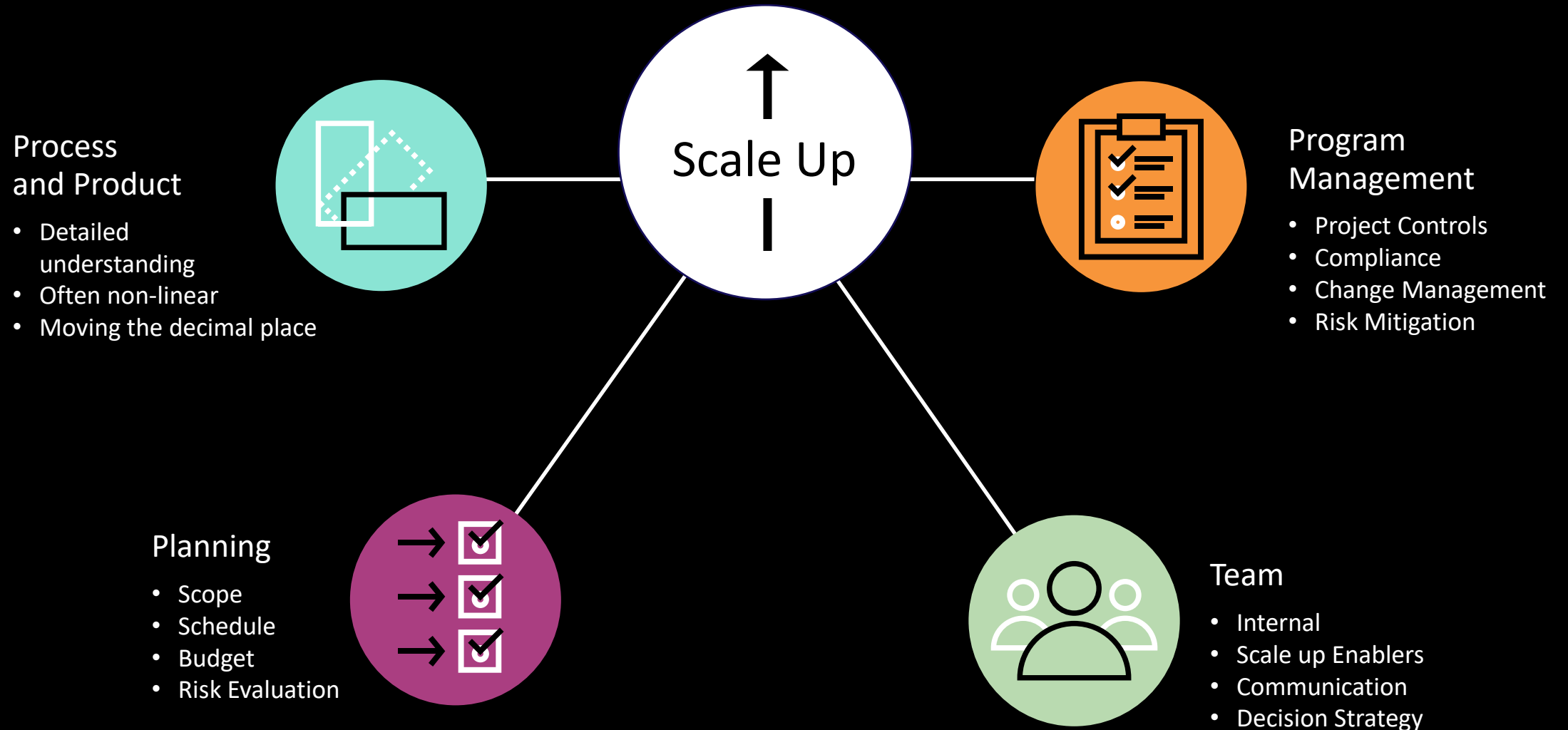
Payback Period = 34 Years!!!

Plume Capture – Direct Costs		
Cost Type	Cost Category	
Capital Costs	Mechanical	\$1,990,000
	Electrical	\$199,000
	Insurance, Overhead & Profit	\$466,000
	Engineering	\$328,000
Capital Cost Subtotal		\$2,983,000
Annual Cost	Power	\$9,000
	Maintenance	\$5,000
Annual Savings	Water	\$149,000
	Sewer	\$160,000
	Chemical	\$197,000
Net Annual Savings		+\$492,000

Payback Period = 6 Years



Scale up - Challenges & Must Have's



Benchmark your project!

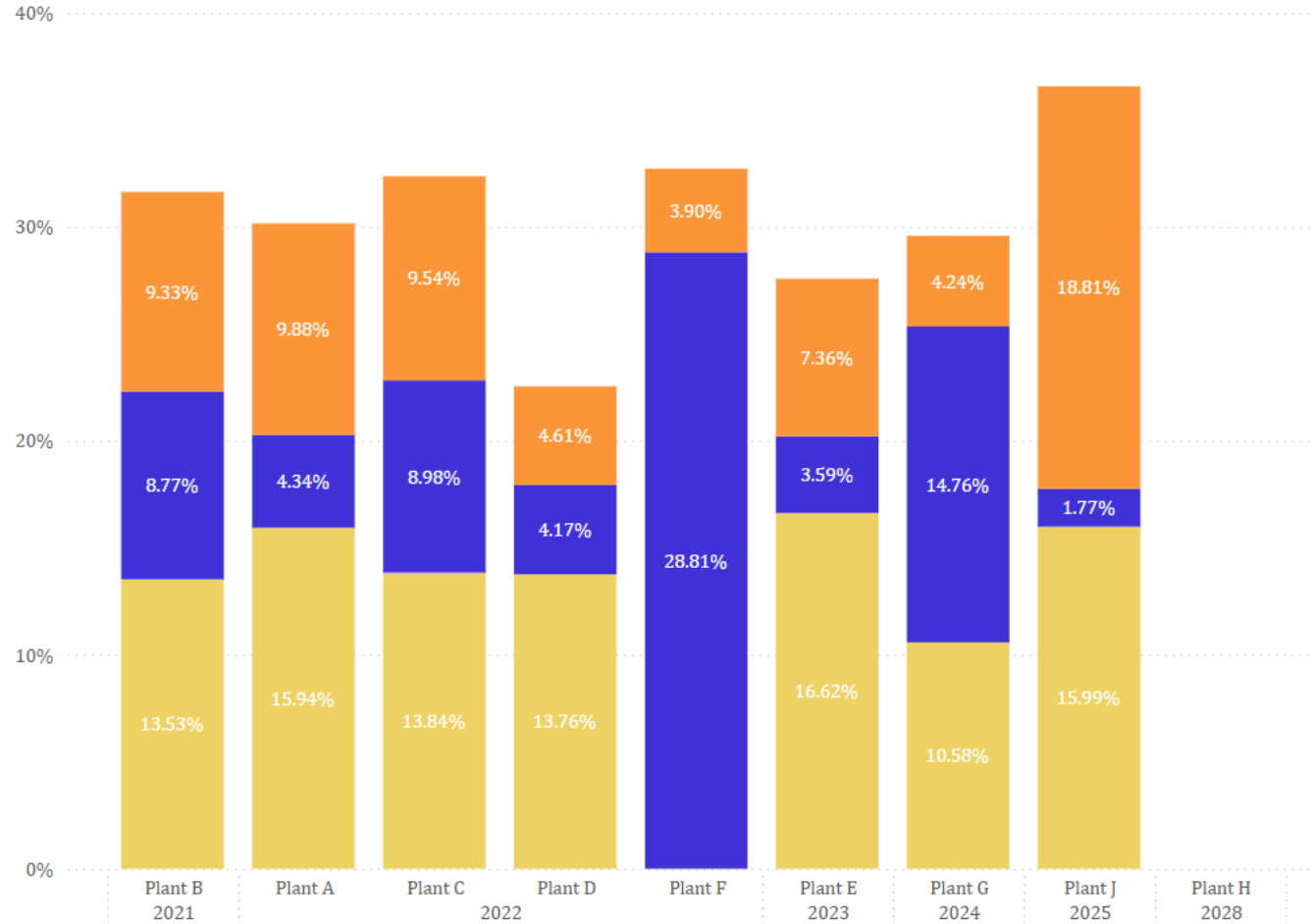
- Locations
- Area
- Acre
- Gigawatts
- Construction Costs
- Utility Power Supply Ca...
- RH**
- 1% RH
- 5-10% RH
- 35% RH
- Chilled Water Capacity
- DHU CFM
- BCU (CFM)
- N2
- Compressed Air
- Natural Gas

Battery Manufacturing Plants / Relative Humidity

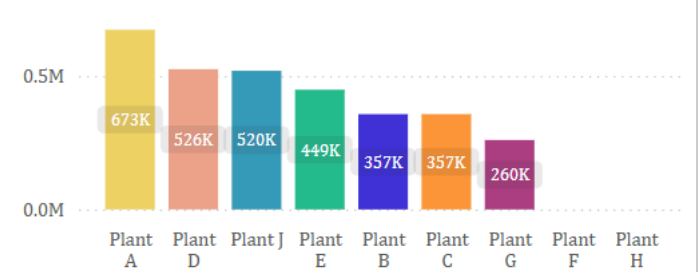


Percentage of Overall Area by Humidity Level Criteria

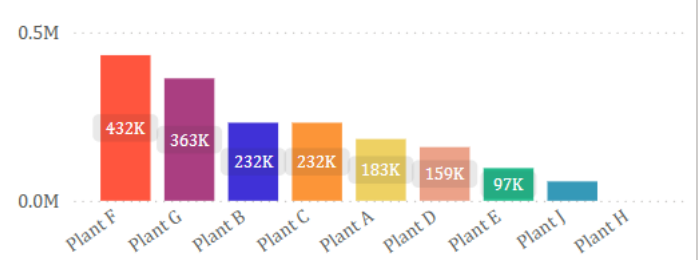
● Sum of 1% SF/ Total SF (%)
 ● Sum of 5-10% SF/ Total SF (%)
 ● Sum of 35% SF/ Total SF (%)



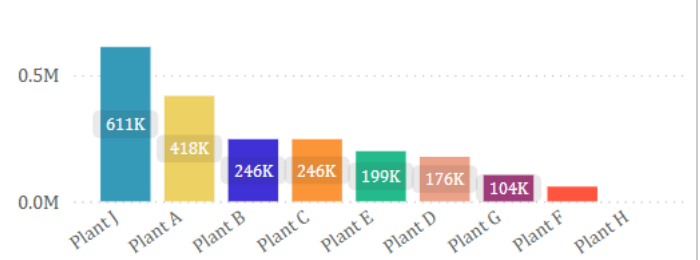
Total 1% Relative Humidity area (S.F.) in the Production Building



Total 5-10% Relative Humidity area (S.F.) in the Production Building



Total 35% Relative Humidity area (S.F.) in the Production Building





- More than three decades working with international clients on major investments.
- Providing executive leadership for multiple lithium-ion battery plants ranging from 2GWh to 47GWh capacity.

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