



Building Toward a Better Future

Our ESD colleagues deliver excellence and innovation in buildings engineering along with data center and other mission critical facilities design.

ESD joins Stantec.

📍 10-30 South Wacker Drive
Lobby Repositioning and Expansion
Location: Chicago, IL
Client: Tishman Speyer
Architect: Krueck Sexton Partners

PEOPLE · EXCELLENCE ·

INNOVATION · GROWTH

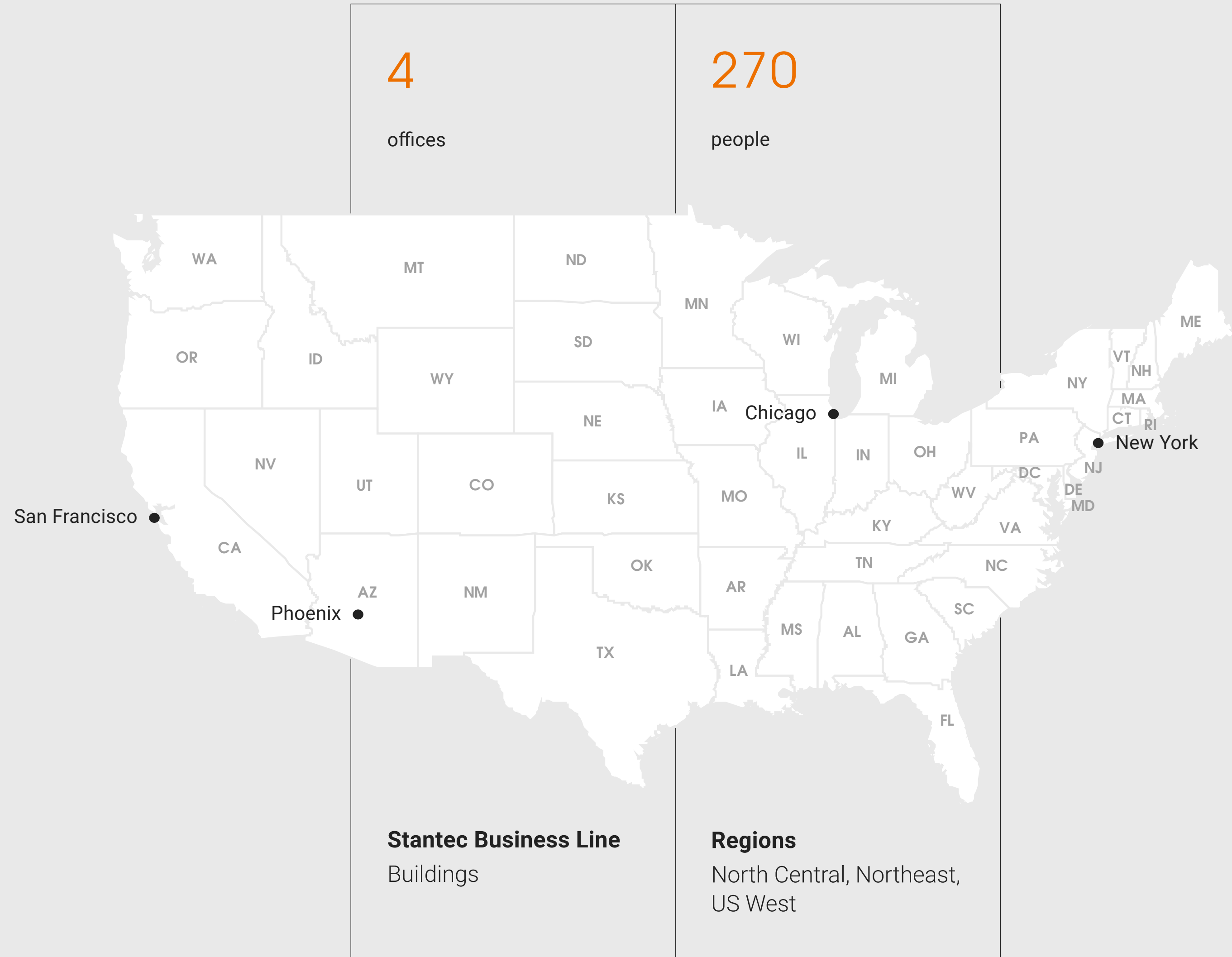


Credit: ©Kendall McCaugherty @ Hall+Merrick

Environmental Systems Design, Inc. (ESD) is a 270-person buildings engineering design firm headquartered in Chicago, Illinois. From high rise buildings, to sprawling data center campuses, to health care facilities, to intelligent workspaces, ESD's mission is to improve society through the built environment.

The acquisition of ESD expands Stantec's mechanical, electrical, and plumbing (MEP) and structural engineering practice by 40 percent in the U.S. These added resources substantially expand our smart building engineering capabilities that support the workplace of the future and the emerging trends of decarbonization, building repositioning, and adaptive reuse.

Together, ESD and Stantec also significantly deepens our expertise in mission critical, helping our combined organization deliver innovative solutions for our valued clients around the world. Data centers represent a rapidly growing segment of purpose-built infrastructure that require an increased level of reliability. These mission critical facilities—spanning nearly every major industry—are designed to maintain building infrastructure, emergency dispatch, data storage, or other critical functions in the face of inclement weather and utility outages. Data centers, especially hyperscale facilities, require special, resilient design considerations developed by uniquely qualified teams with regular exposure to the evolving needs of large-scale companies.





- Automation
- Commissioning + Sustainability Consulting
- Mechanical, Electrical, Plumbing, Fire Protection, Fire Alarm (MEP/FP/FA) Engineering
- Structural Engineering
- Technology



Raj Gupta
Executive Chairman
ESD

Stantec is a top-tier firm that shares our vision to improve society through the built environment. ESD has increased the depth and breadth of its services in recent years. Joining Stantec expands our offering globally and creates exceptional career growth opportunities for our employees.



Leonard Castro
Executive Vice
President, Buildings
Stantec

Merging talent with ESD positions Stantec as one of the top integrated design firms in the U.S. market. Our expanded services in data center, smart building design, and high-performance buildings will offer our clients the flexible and stable facilities that meet their operational needs into the future.



CONFIDENTIAL HYPERSCALE DATA CENTER CAMPUSES

LOCATION: Various Locations in the U.S.

CLIENT: Confidential

ARCHITECT: Confidential

SERVICES:

- Mechanical, Electrical, Plumbing (MEP), Fire Protection, Fire Alarm Engineering
- Power System Studies
- Automation

ESD’s confidential technology client’s hyperscale data center campuses each consist of up to six data center buildings, with each structure encompassing about 500,000 square feet (46,500 square metres). All data center buildings deliver 30+ MW of IT load split across approximately 185,000 square feet (17,187 square metres) of white space. The data center buildings are also complemented by an adjacent administrative building consisting of office, amenity, and storage areas, as well as shipping/receiving space. Each administrative building serves one to two data center buildings. In addition, a new substation is provided for each site.

All sites are based on the same master design with local site adaptations. This has allowed ESD to become more efficient with its deliverables and achieve the client’s goal of uniform consistency throughout its data center program.



Credit: ©Digital Realty

DIGITAL REALTY

LOCATION: Franklin Park, IL

CLIENT: Digital Realty

ARCHITECT: Sheehan Nagle Hartray Architects, (retrofit projects) | Archideas (new construction projects)

SERVICES:

- Feasibility Study
- Master Planning
- Mechanical, Electrical, Plumbing (MEP), Fire Protection Engineering
- Automation
- Power System Studies
- Technology (Structured Cabling, Security)

Digital Realty, a real estate investment trust that invests in carrier-neutral data centers and provides colocation and peering services, recognized an opportunity to develop a large-scale data center close to the Chicago suburban market. ESD was brought into the project to evaluate the feasibility of turning an industrial park into a modern data center campus. Analysis of the site’s power capacity and structure validated its suitability.

The firm’s partnership with Digital Realty continued as it was hired as the prime consultant for the high-tech data center campus. ESD led the design and construction team through the retrofit of multiple building shell and core projects and the design of multiple new data center buildings. The master-planned data center campus covers 40 acres with a generator power capacity of 80 MW.



Credit: ©Josh Partee

LAS VEGAS CONVENTION CENTER EXPANSION

LOCATION: Las Vegas, NV

CLIENT: Las Vegas Convention Center

ARCHITECT: TVS

SERVICES:

- Mechanical, Electrical, Plumbing (MEP), Fire Protection Engineering
- Automation
- Technology (Structured Cabling, Audio Visual, Security)
- Energy Modeling
- Building Analytics
- LEED Fundamental Commissioning

One of the largest convention centers in the world, the Las Vegas Convention Center recently expanded by 1.4 million square feet (130,064 square metres). The new West Hall includes 600,000 square feet (55,742 square metres) of flexible exhibition spaces with multiple infrastructure services including a variety of electrical power voltages and capacities, telecommunications, water and drainage, and natural gas. Ancillary program and support spaces include a concourse, meeting rooms, lobbies, and café/kitchen space.

ESD provided engineering and technology design services for the expansion. The project consists of building automation system (BAS) design, whereby the design incorporates extensive integration with third-party systems including lighting controls, power metering, meeting room audio visual control systems, and elevator and escalator monitoring.



Credit: ©Northwestern Medicine

NORTHWESTERN MEDICINE LAKE FOREST HOSPITAL

LOCATION: Lake Forest, IL

CLIENT: Northwestern Medicine

ARCHITECT: Pelli Clarke & Partners, Gensler, HDR

SERVICES:

- Mechanical, Electrical, Plumbing (MEP), Fire Protection Engineering
- Energy Modeling
- LEED

The 201-bed Northwestern Medicine Lake Forest Hospital features all-private inpatient rooms and advanced technology. A new central plant as designed as a stand-alone building. It was built to support current demand as well as to eventually meet future demand of 1.3 million square feet (120,774 square metres).

ESD created an energy model to be utilized for LEED certification and beyond. Energy conservation measures include optimizing the thermal performance of the façade while balancing the solar heat gain of the glass, external shading techniques, LED lighting, and more. From an infection-control standpoint, water usage is crucial. ESD reduced water-fixture use by 20 percent and domestic hot water use by 26 percent.



Credit: ©Nick Olivieri Photography

151 NORTH FRANKLIN STREET

LOCATION: Chicago, IL

CLIENT: The John Buck Company

ARCHITECT: John Ronan Architects (design architect) | Adamson Architects (architect of record)

SERVICES:

- Mechanical, Electrical, Plumbing (MEP), Fire Protection Engineering
- Technology (Structured Cabling, Wired and Wireless Data Network, Security, Audio Visual)
- iBMS (Integrated Building Management)
- LEED

ESD's client approached the firm with five objectives:

1. Class A+ shell and core office building with features that will attract premier tenants
2. Best-in-class technology and Intelligent Building systems
3. LEED Silver minimum
4. MEP systems that facilitate flexible tenant operation
5. Efficient MEP systems to reduce energy use

The firm achieved the client's goals, delivering a technologically advanced and sustainable 35-story office tower that offers tenants a modern professional environment that supports new ways of working. 151 North Franklin became the nation's first WELL v1 Core & Shell Gold high-rise building in June 2019. The client secured premier anchor tenant CNA to occupy 11+ floors. ESD efficiently modified elements of building design and systems to accommodate tenant requirements within schedule.



NATIONAL OFFICE ENGINEERING AND DESIGN

LOCATION: Various Locations Nationwide

CLIENT: Husch Blackwell LLP

ARCHITECT: Partners by Design (≈ 50% of projects) | NELSON (≈ 50% of projects)

SERVICES:

- Site Assessment/Pre-Lease Services
- Mechanical, Electrical, Plumbing (MEP), Fire Protection, Fire Alarm Engineering
- Technology (Audio Visual, Structured Cabling, Wireless, Security, Sound Masking)
- Commissioning

Husch Blackwell is a full-service litigation and business law firm with offices in 20+ cities across the United States. When the company renovated its offices in downtown Chicago, its goal for the new space was to provide a flexible and productive work environment for employees.

ESD helped achieve this goal by providing consulting engineering and technology design services for the new space. The renovation created private offices, open office workstations, a server room, a pantry/break room, a storage room, copy/print areas, a reception area, café, multi-purpose room, catering kitchen, conference center, quiet rooms, and open collaboration areas.

The trust ESD built with the client during the Chicago project led to the firm providing additional consulting engineering and technology design services for projects nationwide.