



# Simulate, evaluate, and optimize processes

DISCRETE EVENT SIMULATION



## Precision? Check. Efficiency? Check. Big picture thinking? Check.

At Stantec, we design complex facilities, processes, and systems focused on using resources (i.e. space, equipment, materials, people) efficiently and effectively by applying Lean Manufacturing and Industrial Engineering principles. Our technology is ahead of the curve, both in the office and in the field, and we are proud to use FlexSim Discrete Event Simulation (DES) Software. Simulation is commonly used in the study and improvement of physical and information-based workflows which include high degrees of randomness, variability, process complexity, and interdependent processes. The key benefit of DES: the ability to design, analyze, and experiment with real-world scenarios within a risk-free virtual environment.

By utilizing data provided by our clients or collected during time and motion studies, we can use statistical distributions paired with DES software to compose a life-like representation of operations. This virtual model of the operation can then be used to experiment with a wide variety of inputs (staffing levels, shift schedules, process changes, automation, layout changes) to understand the impacts on the system. The result? The opportunity to arrive at better design solutions early in the design process, with improved stakeholder buy-in, and validation of ROI to support business cases.

DES can be applied throughout a facility's lifecycle as follows:

- **Pre-Design** - master planning, feasibility studies.
- **Design** - development, evaluation, and improvement of design concepts from a process and operational perspective.
- **Operations** - evaluation and planning of operational changes not related to facility construction or facility modifications.

Markets and sectors that can benefit from DES include manufacturing; warehousing, supply chain, and logistics; healthcare; operations, maintenance and storage facilities; and, virtually any scenario involving queueing such as retail, airports, etc.

### No. 1

Integrated Architecture  
Engineering Firms, BD&C  
2019

### No. 4

Top 10 by Type of Work—CM/  
PM, ENR 2019

### No. 8

Top 500 Global Design Firms,  
ENR 2020

### ISO 9001

2015 Certified Quality  
Management System

### ISO 14001

2018 Certified Environmental  
Services System

### \$4.3B

Backlog (FY 2019)

Communities are fundamental. Whether around the corner or across the globe, they provide a foundation, a sense of place and of belonging. That's why at Stantec, we always design with community in mind.

We care about the communities we serve—because they're our communities too. This allows us to assess what's needed and connect our expertise, to appreciate nuances and envision what's never been considered, to bring together diverse perspectives so we can collaborate toward a shared success.

We're designers, engineers, scientists, and project managers, innovating together at the intersection of community, creativity, and client relationships. Balancing these priorities results in projects that advance the quality of life in communities across the globe.

Stantec trades on the TSX and the NYSE under the symbol STN. Visit us at [stantec.com](http://stantec.com) or find us on social media.

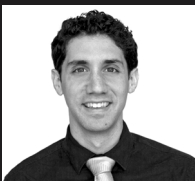
## Key Contacts



**Alan Schnerch, P.Eng.**

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Alan has 18 years of experience focused on operational improvement and facilities planning in manufacturing, maintenance/repair/overhaul, transit operations and maintenance, supply chain, and warehousing/distribution. He uses Industrial Engineering, Six Sigma, and Lean methodologies to increase productivity, eliminate waste, and promote efficient and effective use of client resources.



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With over 13 years of experience, Sy works closely with clients to creatively design manufacturing and maintenance/repair/overhaul facilities using Lean manufacturing concepts. His work involves initial planning and functional layout concepts, preliminary and detailed design, construction coordination, shop equipment, and move facilitation.



Design with community in mind