

9 THINGS TO KNOW ABOUT...

Engineering the Project

The Gordie Howe International Bridge project is the largest and most ambitious infrastructure project along the Canada-United States border. With four main components including the bridge, ports of entry in Canada and the US and the Michigan Interchange (I-75), the complex project requires a high degree of planning, attention to detail and innovative design and building techniques. From conception to completion, engineers play an integral role and are involved in every aspect of development. Find out more below.

1

ENGINEERS AT WORK

Together, Windsor-Detroit Bridge Authority (WDBA) and our private-sector partner, Bridging North America (BNA), have over 150 members on the engineering team working on the Gordie Howe International Bridge project.



2

THE NEXT GENERATION

WDBA offers a co-op program to help students across Ontario develop new skills and gain hands-on work experience. To date, 89 engineering students have contributed to the Gordie Howe International Bridge project.



3

PLANNING & PREPARING

Although construction started in 2018, planning began in 2000. Engineers, along with other experts, were relied upon to deliver a Cross Border Traffic Study, a Planning Needs and Feasibility Study and a bi-national environmental study which led to a new border transportation solution that best met future transportation needs, while minimizing community impacts.



4

SUSTAINABILITY

Part of the engineering process is to protect the environment both on and adjacent to the Gordie Howe International Bridge site. A diverse approach is being implemented to limit any potential adverse effects on the natural environment, cultural resources and neighbouring residents and businesses. Based on the International Organization for Standardization (ISO) requirements, BNA integrated the environmental obligations set out by WDBA into an award-winning, cross-border ISO Certified Environmental Management System to manage the design and construction of the project.



5

GROUNDWORK

Before construction could begin, engineers first made sure sites were properly excavated. Utilities such as water, gas and transmission lines were relocated and various geotechnical soil improvement techniques were used in preparation for construction.



6

MATH EQUATIONS

Engineers must design the bridge to carry a certain load, typically measured in kilonewtons (kN) in Canada and kips (thousands of pounds) in the US. It is done using the weight of the building materials as well as the eventual load it will carry once operational. These complex mathematical equations play a significant role in the design and development of the bridge.



7

SPECIFIC TERMINOLOGY

The bridge platform is being engineered with two main components – the road deck and the bridge deck. The road deck includes the back span, the side span and the approach span over land. The bridge deck, known as the main span, will be located 42 metres/138 feet above the Detroit River.



8

STICK BUILD

Crews are using an 'unbalanced cantilever system' or 'stick build' bridge construction approach. Starting from the towers in Windsor and Detroit, construction moves outward over the river, one segment at a time, meeting in the middle of the bridge.



9

ENGINEERING MARVEL

Once complete, the Gordie Howe International Bridge will be the longest cable-stayed bridge span in North America. In addition, utilizing an environmentally friendly blend of recycled plastic and reclaimed wood fibers to build the deck, it will also be the longest composite-deck, cable-stayed bridge in the world.



PONT INTERNATIONAL
**GORDIE
HOWE**
INTERNATIONAL BRIDGE