



## Case Study

# George Brown College



### George Brown College Graduates to High-Speed Campus-Wide Connectivity with BridgeWave's Gigabit Ethernet Wireless Links

George Brown College (GBC) is one of Canada's largest, most diversified and highly respected colleges, serving a student body of 20,200 full-time and 52,000 continuous education registrants with 143 programs, 64 diplomas, six bachelor's degrees and 1,250 continuing education courses. Founded in 1967, GBC is one of Ontario's fastest growing colleges with three main campuses and 10 training facilities located throughout the greater Toronto area.

The three main campuses, which are located at Casa Loma, St. James and Ryerson University, are connected by fiber-optic leased-lines deployed in a triangular network topology for redundancy. A robust, modular Cisco 10 Gbps core network supports a growing rise in "smart classrooms" with Internet connections, computers, video cameras and other technology tools.

*"We are so happy with our original four gigabit wireless links that BridgeWave's GE60s have become our standard for connecting new buildings. Once we ascertain we have line of sight and the applicable distance, we immediately turn to BridgeWave to achieve the desired capacity, reliability and performance."*

Yves Hébert  
CIO  
George Brown College

*"We continually look for ways to enhance teaching and learning by giving our students, professors and community partners state-of-the-art technology tools," says Yves Hébert, CIO for George Brown College. "Recently, we've seen a significant rise in the use of video in the classrooms along with distance learning and other information sharing applications."*

As technology pioneers, GBC was an early proponent of Voice over IP (VoIP) while also providing sufficient network capacity to support ever-increasing video traffic as well as bandwidth-intensive computer lab "ghosting" for replicating images instantly across dozens of desktops. For that reason, GBC's IT team was quick to seek innovative wireless networking solutions when building-to-building connectivity on the different campuses proved too costly.

## THE CHALLENGE

Traditionally, George Brown College maintained inter-building communications on its main campuses using fiber-optic leased lines. Four discrete buildings on the Casa Loma campus and five buildings on the St. James campus were linked via fiber. Since the local provider had rights of access to fiber that traversed the different roadways that split the respective campuses, GBC was able to achieve building-to-building connectivity under an initially affordable three-year lease arrangement. However, a change in the local provider's minimum distance requirement to three miles resulted in GBC incurring a sizable spike in monthly access fees, creating the following challenges:



## Case Study

# George Brown College



- Increased monthly access fees for fiber-optic leased line services to connect its campus buildings couldn't be cost justified.
- A review of competitive fiber-based services also proved too costly.

*"After ruling out fiber for building-to-building connectivity, we decided to review broadband wireless options," explains Andrew Riem, manager of infrastructure and operations for George Brown College. "Our biggest obstacle was ensuring high availability to meet our Service Level Agreements (SLAs) for Quality of Service (QoS)."*

- "Five Nines" network uptime was a top requirement, yet GBC's IT team had concerns about the impact of severe Canadian weather on wireless link reliability.
- Interference was another worry as the Toronto metropolitan area is heavily congested with wireless solutions operating at varying radio frequencies.

## THE SOLUTION

In seeking a highly reliable wireless option, GBC evaluated several successful deployments of gigabit wireless in Calgary and Edmonton as Western Canada typically has the harshest weather. After receiving positive feedback on the use of GigE wireless in this region, GBC honed its search further, with a full review of GigE wireless solutions from BridgeWave Communications, a pioneering supplier of gigabit wireless products.

GBC next sought the assistance of Trispec Communications, a national engineering and distribution firm headquartered in Montreal that has substantial broadband cable, telecommunications and wireless expertise. Trispec recommended BridgeWave's GE60 license-free product that operates in the 60 GHz spectrum and is ideally suited for connectivity up to three quarters of a mile. In the case of the Casa Loma and St. James campuses, the buildings all were situated close to another with a two-lane roadway separating them.

After working with BridgeWave to perform all the necessary rain-fade calculations for the region, it was determined the gigabit wireless links could meet GBC's network uptime requirements.

*"We were surprised to learn that BridgeWave's GigE radios actually had better availability and uptime projections than fiber," notes Riem. "Of course, you don't have to worry about a backhoe digging up your wireless link. With wireless, we feel like we are much more in control of our building-to-building connectivity."*

The extremely narrow antenna beamwidth of the gigabit wireless radios was an added plus since they delivered interference immunity and enhanced data security.



## Case Study

# George Brown College



With Trispec's installation assistance, GBC deployed four initial BridgeWave links—two at the Casa Loma campus and two at St. James. The links, which have been in place for more than a year, have performed flawlessly.

*"The links have never let us down," says Riem. "When you talk about technology, you can't say anything better than that."*

## THE BENEFITS

Since installing its quartet of BridgeWave links, GBC has deployed two additional GE60s to link new buildings on the St. James campus as part of the college's aggressive growth plans.

*"We are so happy with our original four gigabit wireless links that BridgeWave's GE60s have become our standard for connecting new buildings," adds Hébert. "Once we ascertain we have line of sight and the applicable distance, we immediately turn to BridgeWave to achieve the desired capacity, reliability and performance."*

When the Toronto area was hit recently with its worst snow storm in 60 years, the college's BridgeWave links never faltered, even during whiteout conditions.

*"We had 12-to-18 inches of snow over a weekend and the links didn't even hiccup," says Riem. "I don't worry about them at all."*

With BridgeWave's narrow antenna beamwidth, GBC's IT team also doesn't harbor any concerns about interference with the increasingly crowded Toronto airwaves. Additionally, ultra-low latency performance ensures the transmission of voice, video and data across a completely converged network with full QoS.

In calculating a return on its BridgeWave GigE wireless investment, George Brown College has realized a complete ROI in less than eight months when compared with a fiber-optic leased-line alternative.

*"The cost effectiveness of these links can't be beat," says Riem. "Not to mention they're more reliable than fiber, which means I sleep a lot better at night."*

As George Brown College continues its rapid expansion, BridgeWave's GE60 products will maintain a major role in delivering much-needed campus-wide connectivity.

*"We take pride in pioneering new technologies—in the classroom and across campus," concludes Hébert. "As such, we look forward to finding new ways to leverage BridgeWave's 'virtual fiber' to fuel our growth without the cost, delays and reliability problems associated with traditional leased-line services."*





## Case Study

# George Brown College



**CUSTOMER:** George Brown College, [www.georgebrown.ca](http://www.georgebrown.ca)

**INDUSTRY:** Education

**CHALLENGES:**

- Service provider's pricing change made incumbent fiber connections cost prohibitive.
- High bandwidth connections needed to support seamless connectivity to several campuses.
- Canadian weather and public wireless initiatives created uptime and interference concerns.
- Ultra low-latency performance required for VoIP and video transmissions.

**SOLUTION:** Six BridgeWave GE60 wireless links.

**CHANNEL PARTNERS:** Trispec Communications, a Montreal-based engineering and distribution firm with broadband cable, telecommunications and wireless expertise; [www.trispec.com](http://www.trispec.com).

**BENEFITS:**

- Flawless, "five nines" uptime despite Canada's occasionally challenging weather.
- Narrow beamwidth immune to interference while ultra-low latency ideal for handling voice and video traffic.
- ROI of eight months vs. increased fiber prices of long-time provider.
- GigE wireless solution is proven and poised for additional deployments during college's aggressive growth.



BridgeWave Communications, Inc.  
3350 Thomas Road, Santa Clara, CA 95054  
Ph: 408-567-6900 | Fax: 408-567-0775

© 2008 BridgeWave Communications, Inc. All rights reserved. BridgeWave, the BridgeWave logo, AdaptRate and AdaptPath are trademarks of BridgeWave Communications in the United States and certain other countries. All other brands and products are marks of their respective owners. 6/08