

Brent leads the Entero Information and Communications Technology (ICT) practice and has over thirty-five years of experience in systems installation, design and planning for video surveillance, card access control, communication systems, and associated low voltage technologies.

With a background in emergency response, security, and audiovisual systems design, Brent brings a broad range of design and project experience in healthcare, military, banking, educational, sports venues, and corporate projects. Brent successfully operated a systems integration contracting firm for more than ten years before joining a systems firm for ten years as designer and systems programmer, and most recently led the ICT and security design team for a major consulting engineering firm for over eleven years.

EDUCATION

Certified Technology Specialist - Design,
Infocomm International, Fairfax, Virginia, 2008

Certificate, IED - Airport Announcement Control
System Design, Louisville, Kentucky, 2009

CBRN First Responder Training Program
Certificate, Canadian Emergency Management
College, Edmonton, Alberta, 2009

Physical Security Professional (PSP), ASIS
International, Alexandria, Virginia, 2013

Certified Specification Practitioner (CSP)
Construction Specifications Canada, 2019

Graduate Diploma in Disaster and Emergency
Management, Royal Roads University, Victoria,
BC, 2013

MEMBERSHIPS

Members, International Association of
Emergency Managers

Member, Building Industry Consulting Service
International (BICSI)

Member, ASIS International

Member, AVIXA International

PROJECT EXPERIENCE

Airports & Aviation

Edmonton International Airport* (Public Address
Paging System), Edmonton, Alberta (Designer)
Brent was responsible for design of the new
public address paging system for the Edmonton
International Airport. Designed as a
replacement for the system used in existing
terminal facilities, the new system is fully digital
and uses Internet Protocol (IP) for transmission
of audio throughout the existing and expanded
air terminal.

The system is capable of continuous self-test
operation where each speaker zone is monitored
and tested using audio tones outside of normal
human hearing frequencies. In this way real-
world monitoring of each speaker, amplifier and
other devices in the signal chain is made
possible 24/7. By programming the system to
test each zone trouble log entries are made at
the first sign of a problem thereby speeding up
repair and maintenance.

4 Wing Cold Lake*, Cold Lake, Alberta (Video
Surveillance System)

Brent was the system designer and sales
representative for a major CCTV initiative at the
Canadian Forces Base at Cold Lake, Alberta.

* Denotes projects completed with other firms

This system included outdoor pan/tilt/zoom cameras for surveillance of fighter aircraft and airside ramp activities as well as surveillance within the Military Police jail cells and police station.

The system includes approximately 20 PTZ cameras mounted on hangars and structures at the airfield. A number of additional cameras are placed at strategic locations surrounding a high security (Alert Aircraft) hangar to monitor approach and day/night perimeter.

The system uses network capable Digital Video Recording and enables 24/7 recording as well as live monitoring and control from the security dispatch center at the MP facility. An extensive fiber optic installation allows transmission of video and control signals across the massive military base.

Attractions, Arts & Entertainment

Royal Alberta Museum* – Downtown (Information & Communications Technology Design), Edmonton, Alberta (Designer)

Brent served as the design team lead for the communication infrastructure systems for this design/build project for the new Royal Alberta Museum. Serving the needs of all audiovisual, security, LAN and wireless communications sub-systems, the ICT design includes all cabling, conduit and cable tray to serve the various meeting rooms, performance venues and public spaces within the facility. With a plan for extensive new media, crowdsourcing, interactive media displays, video conferencing, educational broadcasts, and travelling exhibits, the museum is set to embrace numerous new technologies. The facility also includes two data centre facilities to serve the needs of both infrastructure and museum exhibits and audiovisual systems.

Royal Alberta Museum of Nature*, Edmonton, Alberta (Audio Visual Design Consultant)

A \$150 dollar million redesign of the Royal Alberta Museum is in progress and Brent has provided audio and video systems design for the 340 seat theatre within the museum including new digital audio signal distribution and high definition video recording and projection capabilities. EASE – Enhanced Acoustic Simulation for Engineers software was used to create a 3D acoustic model for the space as a tool for sound system design and acoustics enhancement.

Community Institutional

City Council Audio Visual System*, Spruce Grove, AB (Designer)

Brent provided complete design and consulting services beginning early in the project life cycle on this advanced audio-visual system. The system includes provisions for electronic voting, multimedia display and touch panel remote control. Digital audio recordings of the council meetings may be accessed by staff members from the City's intranet.

The Mayor is able to control discussions during public meetings through the use of an electronic touch panel that displays a "Request-to-Speak" queue and voting start and end functions. Each council member is able to enter the discussion or register their vote using an individual touch panel located at their desk position.

Drawing on his extensive design and programming experience from other council chambers and training room projects Brent was able to ensure that the council chambers may also be used for internal or external client events such as training classes or receptions. Provisions have been made in the design for media feeds and future video or audio conferencing.

* Denotes projects completed with other firms

City Council Audio Visual System*, City of Fort St. John

Beginning with initial needs assessment and carrying through to project completion Brent was responsible for system design of an advanced audiovisual presentation system for the City of Fort. St. John. The system includes a mix-minus sound reinforcement system, full video-follow-audio and presentation video switching and an advanced Crestron touch panel based control system which allows for recording and live streaming video of council meetings.

The system fully integrates computer graphics, video cameras, DVD and audio playback and electronic voting capabilities as well as public gallery sound and video reinforcement and broadcast audio/video distribution.

As prime designer of the system Brent was responsible for dealing with end users, administration, architect and electrical engineers and local broadcasters to ensure the projects success.

National Monitoring Centre* (The Commissionaires – Northern Alberta)

On this project Brent worked as part of a team to design a new electronic surveillance monitoring command & control centre. The National Monitoring Centre (NMC) was designed to provide live real-time video monitoring of alarm events, 'virtual guard tours', and after hours monitoring of various government and private facilities.

The NMC facility was designed as a secure location for video monitoring, alarm verification and remote equipment tracking. Using IP based surveillance systems the NMC is capable of real-time interactive audio and video connections with monitored facilities.

As key designer for application systems, Brent was responsible for back up and recovery plans for all communication facilities, servers, workstations, and electrical power as well as audio/video switching and distribution between all operator and supervisory positions.

Corporate / Office

Alberta Government Centre* (Report on Emergency Notification Systems), Edmonton, Alberta (Designer)

The Alberta Government Centre encompasses a number of buildings located in downtown Edmonton and includes the Alberta Legislature building, the surrounding grounds, offices, and an extensive underground pedway system connecting each building. Security services for the grounds are provided by the Alberta Sheriff service who require a comprehensive system for emergency notification and communication with the constituents within Government Centre. Brent served as primary investigator and author of a report examining the existing systems available as well as the options for emergency notification system channels to address the broad range of facilities and areas within the Government Centre. Public events are often held on the grounds and include large crowds making the need for effective communication a key safety issue. The report provides recommendations for system design that addresses systems deployment as well as budgeting and standards compliance.

* Denotes projects completed with other firms

Education

University of Alberta* – Emergency Manuals Preparation, Edmonton, Alberta

Brent served as project manager for the development of emergency manuals for over 80 different facilities at the University of Alberta. These manuals will be used by emergency responders and provide key information on building systems, hazards and contact information. The Stantec team gathered detailed information for each building in order to ensure accurate info is available to responders and on the University facility management system.

District Education and Conference Centre*, Surrey, BC (System Designer)

Brent was responsible for design of audio visual systems for the new consolidated conference and office facilities for the Surrey Board of Education. Included in the design are numerous audio visual systems for meeting rooms, and classroom and computer training labs. The most elaborate of the systems is housed in the new Council Chambers and provides for both high definition and standard definition video recording for council meetings for broadcast on the local cable television system and via streaming media delivered via the Internet. The system is also capable of high definition video conferencing and multimedia presentation for council meetings or training in the multi-purpose council chambers space.

Saskatchewan Institute Applied Science and Technology (SIAST)* (Report on Emergency Notification Systems), Saskatchewan (Designer)

SIAST is a multi-campus technical college serving the province of Saskatchewan and wanted to develop a plan for an emergency notification system that would work in each of their campus locations. Brent was responsible for conducting a review of currently installed notification systems and for development of a report that identified opportunities for integration of existing systems with new technology to provide a common notification platform for all facility managers. The resulting system will leverage multiple channels of communication in order to alert and inform staff members, students and the public of emergencies that may affect them.

The University of Regina* (Report on Emergency Notification Systems), Regina, Saskatchewan (Designer)

The University wanted to develop a system for emergency notification of staff, students and visitors in the event of an emergency that might threaten their safety or well being. Brent was responsible for authoring a report that paves the way for deployment of such a system. Through a comprehensive review process that included comparison of various technologies and service models, Brent was able to provide insight into the development of a multi-channel notification system that allows the use of various communication methods such as: paging, email, voice messaging, location based notification devices, SMS and text messaging, etc. Using this report as a guide, the University was able to develop a plan for system deployment.

* Denotes projects completed with other firms

The University of Regina* (Video Surveillance System Upgrade), Regina, Saskatchewan

Brent was responsible for design of a systematic upgrade to the existing video surveillance system for the University of Regina campus. The existing system used older digital video recorders (DVR's) that had reached their end of life, so a new system was designed that leveraged network video recording (NVR) technology integrated with the Universities card access control system to provide greater value and ease of use. Now staff are able to monitor campus security from a single common platform which reduces training and operational costs.

Video Conference and School Board AV Systems*, Whitecourt, AB (Designer)

Brent was responsible for systems supply and support during the system-wide deployment of video conferencing throughout Northern Gateway Schools. The entire school division is now able to leverage video conferencing capabilities for a variety of uses.

With head office located at Whitecourt, Alberta the school division includes 20 schools from elementary to senior high as well as outreach programs in several communities. The school division stretches over 350km from Alberta Beach and Onoway near Edmonton to beyond Valleyview along Highway 43.

Video conference systems vary in size (depending on location) from simple set-top or computer solutions to complete audio visual and video conference classroom suites located at Sangudo, and Valleyview locations. The Divisions central office is also equipped with an advanced AV and video conference system in the School Board meeting room which allows board meetings to become interactive events bringing staff, students and the public together across the division.

Brent has received certification training from major manufacturers including Polycom, Tandberg and Sony as well as extensive training and certification in systems design through Infocomm, the international audio visual association.

Healthcare

Lamont Health Care Centre*, Lamont, Alberta (Designer)

Brent was responsible for a fire alarm system and upgrade/replacement project in this facility which includes active care, extended care and nursing home wings.

Covenant Health* - Mary Immaculate Hospital, Mundare, Alberta (Designer)

Brent was responsible for a project for nurse call system replacement in this long-term care facility.

High Prairie Health Centre* (Communication Systems), High Prairie, Alberta (Designer)

Brent is responsible for information and communication system design for a new hospital in North Central Alberta. The design includes all infrastructure for communication, data networks, wireless, security, access control, nurse call, and audiovisual systems. The hospital includes emergency, diagnostic imaging, long term care, surgical suites, and laboratory services and provides service as the primary care facility for the residents of the community and surrounding area.

Royal Alexandra Hospital Units 27, 28, 29* (Nurse Call Replacement), Edmonton, Alberta
Brent was involved as the designer for an emergency replacement of failing nurse call equipment for three units within the Royal Alexandra Hospital facility. This replacement met the clients urgent timeline to return the hospital units to full capacity.

Bonnyville Hospital* – Nurse Call Replacement, Bonnyville, Alberta

Brent served as project manager and system designer for the replacement of the nurse call system for Bonnyville Hospital in Alberta. This system upgrade was completed in a tight time frame because the previous system was failing.

Strathcona Healthcare Centre* (Communication Systems), Sherwood Park, Alberta (Designer)

Brent provided communications system design services for nurse call, IT and communications structured cabling systems, wireless LAN and provided peer review services for security and video surveillance systems for this new urgent care facility. Brent was involved in meeting with user groups and providing design to meet Alberta Health Services standards and departmental needs.

Bermuda - King Edward VII Hospital Upgrade* (Communication Systems), Bermuda (Designer)

Brent served as a technical advisor to the Bermuda Hospitals Board (BHB) during the development and design/bidding process for the new Private-Public Partnership expansion of the King Edward VII Hospital in Hamilton, Bermuda. Brent was involved in the preliminary design of systems for communication, data centre, audio/video, security, nurse call, patient entertainment, etc. As part of the design and bid evaluation team Brent was responsible for liaison with senior hospital management on all aspects of communication systems required for this major acute care hospital redevelopment which includes the construction of new surgical, emergency, diagnostic imaging, data centre, and hospital wards, as well as integration with existing facilities.

Centre for Addiction and Mental Health* (Video Surveillance System), Toronto, Ontario (Designer)

Brent was involved in video surveillance system design for this Private-Public Partnership project which saw expansion of the CAMH facilities through construction of three new facilities at their Toronto (Queen Street) site. The integration of existing CCTV cameras into a new video monitoring and recording facility, along with installation of video camera systems for a new parking structure, office and clinical treatment areas were included in the scope of the project.

Retail / Commercial

Video Conference and Audio Visual Systems* Common Wealth Credit Union*, Lloydminster, Alberta (Designer)

With a vast geographic service area Common Wealth Credit Union (CWCU) was looking for a way to leverage their existing TCP/IP network to allow video conference training and meetings. Brent was instrumental in providing a comprehensive system that allows internal video conference training events from the CWCU headquarters in Lloydminster, Alberta to eight locations across the province.

Now staff are able to present new products, procedures, and other training from the Lloydminster training centre to staff at bank branches as far away as Grande Prairie. A complete audio-visual presentation system at the training centre has been integrated with a networked video conference system to allow participants to interact face-to-face without having to travel hours or days to attend.

Working with the banks IT staff and the architect engaged for design of the training facility Brent was able to offer valuable consultation on AV system design that worked best with the training room aesthetics and the technical needs of the client.

ICE District* – Security & Communication Systems, Edmonton, Alberta

Brent led the design team and produced a complete ICT design for the ICE District development in downtown Edmonton. This project, budgeted at over 1.8 billion dollars, includes a connection to the Rogers Place arena, a JW Marriott hotel property, the Edmonton Tower, a 4,600-stall underground parkade, and more. The security, fiber optics, communication and wireless network systems support communication and safety across the entire district.

Stantec Tower – Stantec Tenancy* – Security, ICT, Audio and Video, Edmonton, Alberta

Brent led the design team and was responsible for design of all security systems, communications, air-blown fiber optics, sound masking, and over 160 audio visual systems for the new Stantec headquarters in Edmonton.

Sports, Recreation & Leisure

Millwoods Arenas* – Sound System Upgrade, Edmonton, Alberta

Brent was responsible for sound system design for the Millwoods twin ice rinks. Replacement of the original building paging system with a new, state-of-the-art digital signal processing (DSP) controlled audio system has addressed numerous issues with poor coverage and lack of intelligibility. Using EASE – Enhanced Acoustic Simulation for Engineers software an acoustic model of the ice rink was created and the system performance and design was confirmed prior to bid. The final system installation was then confirmed against the computer model and the resulting improvement in sound quality and coverage was documented.

Red Lake Centre* – Theatre Lighting, Audio and Video, Red Lake, Ontario

Brent designed a complete advanced AV and lighting system for the community recreation centre at Red Lake. The system includes a motorized lighting lift system, theatrical draperies, and digital audio system.

* Denotes projects completed with other firms

Transit

Edmonton Transit* (Security Command Centre Relocation), Edmonton, Alberta (Designer)

Brent served as design team lead for a project to relocate and expand the transit communications (Surface Operations) centre within the Churchill Station in downtown Edmonton. The new communications centre includes an extensive audiovisual system including an advanced video management solution and video distribution and display platform, a new data centre, and incident command room audiovisual system. The project also included architectural and interior design, operations consoles, mechanical systems, electrical, and communication cabling design. A key element of the design is a three-part video wall spanning the communications centre allowing improved situational awareness and display of any of the 2,500+ video surveillance cameras located across the transit system. Designed for 24/7 operation the systems include connections with a back-up generator and uninterruptable power system (UPS) to ensure continued operation even in disaster conditions.

Edmonton Transit – Light Rail Transit System*, Edmonton, Alberta (Communications & Security Consultant)

Brent provided peer review for the design of communication systems for the North LRT Extension project. This included review of all fiber and copper backbone cable systems, distribution cabling, CCTV, card access, radio, telephone, paging and visual communication systems, and BMS and security systems. This extensive review of all drawings and specifications for the system resulted improved accuracy of the final tender packages and allowed the new systems to integrate seamlessly with existing systems for communication and operations.

Edmonton Transit – Light Rail Transit System*, Edmonton, Alberta (CCTV System Upgrade)

Brent was the system designer for a major upgrade of the CCTV system from an analog distributed matrix switch to an IP based system incorporating legacy analog cameras, new servers and workstations, and interfaces to existing alarms/BMS, etc. The system also includes new command & control center hardware and sub-systems.

Approximately 500 existing cameras as well as new transit stations and right-of-way locations (including fiber optic transceivers) are incorporated. System is designed to expand without limit as an enterprise class surveillance solution.

Brent was responsible for interfacing with the customer (City of Edmonton Transit) – presenting the proposed CCTV solution both in written and formal presentations as well as designing and documenting the project for the contractor's installation and project management staff.

* Denotes projects completed with other firms