



Women's College Hospital Redevelopment Project

CLIENT

Women's College Hospital

LOCATION

Toronto, Ontario

PROJECT DESCRIPTION

The Women's College Hospital (WCH) involved the design-build-finance-maintain construction of a new 639,000 sq. ft. medical tower by an integrated team of contractors and consultants including Walsh Construction / Bondfield Partnership and Black & McDonald (B&M). The work had to be done in two phases. Phase 1 involved a new ambulatory care hospital with critical care unit. Phase 2 was primarily focused on research and education. Both phases had to be completed on time so that the hospital would be fully operational on schedule.

This project followed a healthcare replacement model, consolidating most hospital services in one location. WCH's programs include consolidation of surgical services, ambulatory services, critical care, diagnostics, women's health, primary care, chronic disease management, mental health programs, and ancillary/administrative services.

B&M SCOPE OF WORK

B&M's focus as a subcontractor was the design-build of the integrated electrical-mechanical system. The mechanical team provided complete HVAC, plumbing, and medical specialty systems, including building steam heating provided by the Enwave Deep Lake Steam Producing Plant; building cooling backed by three chillers/cooling towers capable of producing in excess of 1,400 tons of cooling; 18 large air handling units delivering in excess of 450,000 cfm; elaborate steam, air and water distribution systems; sophisticated building automation system; complete medical gases system delivering air, oxygen, and nitrogen; and complete wet/dry fire sprinkler system and fire stand pipe system.

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The electrical team provided, equipment and services on a turnkey basis including design, project management and project commissioning services. Equipment installed in this project included:

- High and low voltage distribution equipment
- Diesel generators for emergency power
- All lighting and small power
- Various specialized systems such as nurse call, lighting control, fire alarm, audio/visual, and security system

A gold-standard data/telecommunications network was installed within WCH, including all switches, fibre optic cables and uninterruptible power supplies. The key features of this project included the coordinated 3D Electrical and Mechanical BIM (Building Information Modeling) drawings prepared and provided by B&M.

B&M is now providing Facility Management & Operations services to Women's College Hospital. The Women's College Partnership—the Integrated Team—won the Silver Award for Project Financing at the National Awards for Innovation and Excellence by the Canadian Council for Public Private Partnerships (CCPPP).

INNOVATIVE PROCESS

The mechanical and electrical services and equipment were full-sized to accommodate for phase 1 and 2 needs, and for future expansion.

All construction was carried out with minimal disruption to existing hospital operations. Heavily planned and controlled shutdowns were carried out for tie-ins from the phase 1 operating facility to the phase 2 facility.

The hospital's operating and surgical suites were located on the 8th floor with the mechanical room on the 9th floor. This necessitated a very stringent mechanical design to combat acoustic and vibration considerations.

Since the project was located in the downtown core and adjacent to a 56-storey condominium tower, special consideration had to be provided for the generator exhaust and noise so as not to disturb the residents.

LEED level "Certified" was required by the project agreement. The project achieved LEED Gold through innovative solutions and the synergies produced by the integration of design and construction activities.