



## BRIDGEPOINT HEALTH, Toronto, ON

**Gross Floor Area: 680,000 s.f.**

**Construction Cost: \$622M**

**LEED Certified**

*The new Bridgepoint Hospital is a design built project through Infrastructure Ontario's (IO) "P3" program. The 11-storey structure, with two levels of underground parking, and one underground loading level replaces the existing hospital building. The 680,000 square foot state-of-the-art rehabilitation hospital with 472 beds is affiliated with the University of Toronto.*

*In addition to the new hospital, the historic Don Jail was renovated to house the administrative offices, associated with the hospital.*

CFMS provided the following services for the project:

1. Review commissioning specification for the general, mechanical, and electrical sections
2. Review contract documents at 100% design stage prior to issue for construction.
3. Identify every test identified in specification and provide a spread sheet
4. Review commissioning schedule provided by PCL
5. Review approved shop drawings of major equipment for commissioning issues
6. Static testing – witness one per category to review procedures.
7. Static testing – assist PCL to verify that all tests have been done and documented in PCL catalogue
8. Dynamic testing – witness one of each major type of equipment
9. Dynamic testing – assist PCL to verify that all tests have been done and documented in PCL catalogue
10. Mechanical systems inspections – above ceiling and equipment room inspections for commissioning issues.
11. Air and water balance – assist PCL to ensure plan and schedule are prepared
  - Witness measurements at supply and return of each AHU, 5 terminal boxes per AHU, main water supply and return
  - Review interim and final balancing reports and comment
12. BAS system testing – see list of systems reviewed once BAS complete and BAS test sheets forwarded
  - general review of graphics for completeness
  - monitor 21 acceptance test and trend logs
13. Functional testing – prep documents, perform testing, set up trends
14. Performance testing – utilizing trend data to review performance under optimum design conditions
15. Electrical systems – review ITC reports and comment
16. Diesel generator test – by ITC – CFMS review of reports
17. F/A – witness mechanical systems shut down and smoke control
18. Security, CCTV, PDA, Patient Wandering – witness final demo and review test forms to verify completion of documentation
19. Nurse Call – witness final demo and review test forms to verify completion of documentation.
20. Lighting Control – witness final demo and review test forms to verify completion of documentation
21. O&Ms – review (consultants issue acceptance)
22. Training – review agenda and schedule and requirements by Operations Group
23. Commissioning reports – monthly updates to PCL identifying progress and outstanding issues

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### *How CFMS made a difference:*

Commissioning assisted in the delivery of the Bridgepoint Hospital project, to provide a safe and healthful facility; reduce operating costs; optimize energy use; ensure adequate O&M staff orientation and training; and improve installed building systems documentation.

Commissioning benefited the Hospital Administration, through improved workplace performance due to higher quality environment and improved energy efficiency.

For mission-critical facilities like the Bridgepoint Hospital, the cost of not commissioning is equal to the costs of correcting deficiencies plus the costs of inefficient operations.

Commissioning involves functional testing to determine how well mechanical and electrical systems work together.

Functional tests of equipment and systems also helped to determine whether the equipment meets operational goals and whether it needs to be adjusted to increase efficiency and effectiveness.

In addition to the performance needs of commissioning critical facilities, commissioning qualifies the Hospital to obtain the Leadership in Energy and Environment Design (LEED) certification. Commissioning is a pre requirement for LEED certification and the rating system is developed to improve energy efficiency and environmental performance in the Hospital.

The bottom line is that commissioning improves a building's asset value. A properly functioning building with reliable equipment kept in good condition is worth more than their uncommissioned counterparts. Commissioned systems and equipment retain their value longer. Commissioned buildings provide comfortable, healthy working spaces that promote productivity, and systems that function properly use less energy, experience less down time and require less maintenance, which saves building management money.

### *CFMS made a difference by ensuring that:*

- ♦ *the systems were installed, functionally tested and capable of being operated and maintained to perform in conformity with the design intent.*
- ♦ *the hospital installed with highly efficient power and lighting systems, photovoltaic technologies and sophisticated building technologies were accompanied by strict construction quality assurance and performance verification measurements.*
- ♦ *systems start-up acceptance and training was applied throughout the construction of the project.*

*CFMS worked with the tight schedule alongside the Contractors to ensure deadlines were met.*

### **Why CFMS was chosen:**

CFMS has been providing independent commissioning services since 1992.

CFMS has proven experience providing Total Building Commissioning, including mechanical and electrical systems commissioning.

We believe in Partnership with Design and Construction Teams to develop quality control programs that deliver Building Systems which provide Design Intent Performance.

Engineers and Technicians at CFMS have many years of experience in providing the Commissioning Process.

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## *What was memorable about this project:*

One of the memorable events was to prepare the building for the “Black Out Test”.

CFMS worked with the construction team to prepare and to demonstrate to the Hospital Management that the Building Systems would perform interactively according to the documented design intent and the Owners’ operational needs.

On the test day when the power to the building was turned Off at the main transformers by the City, CFMS monitored the operation of the HVAC systems, verified that the two generators started and that the ventilation systems in the two rooms functioned correctly. The Automatic Transfer Switches transferred power with the set time delays to avoid voltage fluctuations. The Energy Management System (EMS), enabled the steam, heating, and cooling plants and the critical equipment, such as the air handling units, Isolation Room systems, Computer Room Units, Comm Room FCUs, sump pumps, parking ventilation under emergency power, without any interruptions at all the field panels. When power was restored back to normal, the EMS re-established power to all field panels and the HVAC systems back to normal without any interruption. The operation of the emergency lighting, elevators and the fire alarm system was also tested by the other sub trades.

All the systems performed and communicated according to the documented design intent and the test was a Pass.

### **About the CFMS Project Manager:**

*Balaratnam ( Maha) Mahadeva,*

*Maha holds a Production Engineering Technology diploma from Ceylon College of Technology and a certificate of Building Environmental Systems Operator – Class 1 from Seneca College of Applied Arts and Technology. In 1996, Maha was awarded by the Building Owners and Managers Institute International with a Diploma for Systems Maintenance Administrator. In addition, he is an associate member of the American Society of Heating Refrigeration and Air conditioning Engineers.*

*Maha joined CFMS in 2009, and works on assignments focusing on building commissioning for LEED NC, LEED EB and LEED CI and new construction and retrofit projects. He is currently working on projects that include: DHL Office Building, AURA Residences and a LEED EB Office Building project.*

*Maha brings a wealth of valuable experience in HVAC installation, commissioning, building operations and building automation controls and is a valued member of the CFMS team.*



### **About CFMS**

CFMS Consulting Inc. is Canada’s leading independent third-party building commissioning company and has been partnering with building owners, architects, designers and construction teams since 1992 to achieve superior quality control – from the building design phase all the way to the initial year of operation. CFMS specializes in total building commissioning, LEED commissioning, re-commissioning and facilities management with projects ranging from new construction, existing buildings, education, retail, institutional and tenant improvements. The company has completed commissioning projects for over 270 schools, 40 healthcare facilities and hundreds of institutional and commercial projects. With CFMS you are guaranteed to receive 100% authentic reporting, strategic expertise and guidance to reach your desired project goals.

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