Northwest Territories

Helping you plan in the new Millennium

Wondering what life expectancy is left in your building?

Wondering what Building Code requirements you need to meet?

Have a building problem you want solved?

Technical Support Services provides:

- Technical Status Evaluations
- Technical Performance Evaluations
- Commissioning Evaluations
- Problem Solving Evaluations

PUBLIC WORKS SERVICES

TECHNICAL EVALUATIONS *of* NORTHERN FACILITIES

What is a Technical Evaluation?

A technical evaluation is a process, developed by the Department of Public Works and Services, to report on the condition and performance of architectural, structural, mechanical and electrical systems, subsystems and components in buildings and works facilities. Recommendations based upon the Good Building Practice guidebook, the National Building Code and other regulatory agencies are included in the report. It provides sufficient information for program and facility planners, designers, builders and operators to know which systems, subsystems, components and materials are at or near the end of their economic service life, and may be in need of repair or replacement. As well, the report outlines how operating methods can be corrected to make facilities safer, more comfortable, more energy efficient and more durable.

Facilities We Evaluate

Buildings: Schools, hospitals, health centres, air terminal buildings, libraries, warehouses, garages, water treatment plants, community halls and office buildings, group homes, recreation facilities, research institutes and correctional facilities

Works: Water supply and distribution, waste water collection and disposal systems, water and sewage treatment plants, truck fill stations, and water storage facilities

Fuel storage and distribution facility evaluations include design reviews, on-site inspections, code and standards investigations

Granular materials evaluations

Technical Evaluations of Northern Facilities

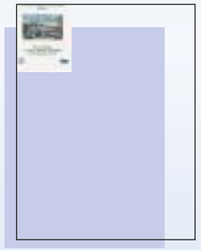
What can a technical evaluation do for you?

Status Evaluations

Status evaluations are conducted on buildings to assist owners in prioritizing their buildings with respect to proposed renovations, additions, or replacements. The investigation considers all of the building systems, subsystems and components. The status evaluation considers only the technical aspects of the building; however, it can be conducted in conjunction with a functional analysis of the building by facility planners.

An evaluation can also be done in the project planning stage, for example, when establishing budgets and capital plans. Additionally, code upgrades, life safety concerns and operational and maintenance requirements can be identified well in advance of starting the design and committing capital dollars.

Extensive on-site inspections by our team of experts is coupled with historical research on the facility and analysis of operational data (energy consumption, thermal loss, air quality, etc.), resulting in a comprehensive 50-100 page report.



Performance Evaluations

A performance evaluation considers whether the building and systems:

- were constructed properly
- are being operated and maintained properly
- are subject to premature failure

The report includes details on observations made, measurements and data recorded, maintenance concerns, life and fire safety issues, and supporting photographs.

Often a performance evaluation is conducted in conjunction with a post-occupancy evaluation, which includes a functional evaluation of the building spaces and their suitability to the occupants and users.

Problem Evaluations

Having a problem with your building? We can do a 'problem evaluation', which includes an on-site investigation into a specific problem affecting the building and/or its occupants. Common problems we can solve include: poor indoor air quality; building envelope problems (e.g., vapour barrier, air barrier, moisture and condensation problems); excessive heat loss (using thermal scanning analysis); building structural problems; heating, ventilation and temperature control problems; lighting level complaints; and power-related problems including power consumption concerns.

The report includes findings, recommendations and related cost estimates, and supporting photographs.

Commissioning Evaluations

A commissioning evaluation is performed at the completion of construction, typically prior to turn over to and occupancy by the owner. The decision to do a commissioning evaluation on a building may be based on the dollar value or complexity of the project, or on the critical nature of the building (for example, a hospital, health centre or school).

The commissioning evaluation verifies that the systems and components have been constructed in accordance with the design, that they operate and/or function as the design intended, and that operations and maintenance personnel have been properly trained. Detailed testing, measuring and inspection of the building systems are also included in the commissioning evaluation.

A commissioning evaluation may be conducted as part of or in conjunction with the final inspection and start-up of systems in the building. The commissioning evaluation report is prepared in a format similar to the performance evaluation report, with each building system and/or subsystem itemized and rated.

Typical Evaluation Report Format:

- **Executive summary** describes the building's overall condition and outlines specific concerns at a glance.
- The **building description** includes an overview of all the building systems present at the time of the field investigation.
- **Detailed records** provide a narrative description of the existing condition or status of each system component, with corresponding recommendations.
- **Photographs** provide a visual display of actual discipline-specific component status.
- **Maintenance concerns** and **cost estimates** are presented.

Remaining Service Life:

Refers to the remaining cost-effective service life of the system or component, under normal operating conditions and with proper maintenance.

Ratings: Over 15 years; 10 to 15 years; 5 to 10 years; 0 to 5 years; Zero years

Recommended Action Priorities:

Refers to the urgency of the recommended action. The urgency reflects the importance of the recommended action to the element's safety, cost-effective operation, or service life.

Ratings: Mandatory (legal); Code Upgrade; High Priority; Desirable; Suggestion; None

Performance Rating:

Refers to how well the identified element conforms to technical performance requirements or to standards called for in codes, to standards and guidelines for design and construction quality, and to operating and maintenance standards.

Ratings: Very Good; Good; Satisfactory; Unsatisfactory; Not Determined

Building Systems We Evaluate:

Architectural and Structural Systems

Foundations
Structural Frame
Building Envelope
Air/Vapour Barriers
Thermal Insulation
Sheathing, Siding
Windows/Doors
Access Hatches
Attic Construction
Exterior Closure
Roofing
Interior Construction
Partitions, Doors, Windows
Interior Specialties, Interior Finishes
Stairways, Ramps, Decks
Barrier Free Accessibility
Thermal Scanning and Analysis
Landscaping, Drainage

Mechanical Systems

Plumbing Systems
Water, Sewage Piping
Water, Sewage, Fuel Storage Tanks
Fuel Supply Systems
Heating Systems
Hot Water Boilers
Ventilation and Air Conditioning Systems
Air and Hydronic Distribution
Heat Transfer
Exhaust Systems
Direct Digital Control Systems
Electrical, Mechanical, Pneumatic Controls
Testing, Adjusting and Balancing
Fire Protection Systems
Sprinkler Systems
Fire Protection Specialties
Waste Heat Recovery
Hazardous Component Abatement

Electrical Systems

Service and Central Distribution
Transformers
Motor Control Centres
Distribution Panels
Branch Wiring and Devices
Lighting Systems and Controls
Fire Alarm Systems
Smoke Detection Systems
Security/Access Systems
Clock and Program Systems
Mechanical Alarm Systems
Panic Alarm Systems
Telephone Systems
Local Area Networks
Public Address and Music Systems
Television Systems
Uninterruptible Power Systems
Packaged Engine Generator Systems

Careful management, innovation, research, quality assurance and experienced personnel are hallmarks of our customer service.

Technical Support Services

Municipal Engineering

The evaluation can include water sampling and analysis, solving water quality problems, performing pilot studies, trouble-shooting, design reviews, water system analysis, water treatment plant optimization, facility operator training and research, and selection of best available technology for water treatment systems.

Maintenance Inspection

Examination of Log Sheets to verify Code compliance for the maintenance, inspection and testing of Fire Alarm Systems, Generators, Fire Pumps, Extinguishers and Boilers.

Review of Life Safety practices that impact the fire safety, egress, and basic safety of the occupants and the public. Overview of operation of facility hardware and installed systems.

Granular Materials

Provide assistance to identify and develop granular sources, select granular materials, develop granular source management plans, recommend granular production alternatives, prepare granular investigation reports, and manage related land claims issues.

Developing publications towards building better northern facilities

WHO ARE WE?

Technical Support Services is a group of professionals with extensive training and experience. We provide technical assistance to communities, program departments, project management teams, boards and agencies in the planning, design, construction, operation and maintenance of buildings, including:

- Architectural/Structural
- Mechanical
- Electrical
- Municipal water and sanitation services
- Granular resource management

Technical Support Services is part of the Asset Management Division of Public Works and Services, GNWT, located in Yellowknife.

Want to arrange for a Technical Evaluation on your building(s)?

CONTACT:

Technical Support Services
Asset Management Division
Public Works and Services
Hodgson Building, 3rd floor
Box 1320, Yellowknife, NT
X1A 2L9

Tel: (867) 920-8088
Fax: (867) 873-0226
Email: GBP@gov.nt.ca
http://www.pws.gov.nt.ca/