

Awards

Award of Excellence 2011

Municipal Engineering Category

Consulting Engineers
of British Columbia

District of Kent
Duncan-Bateson Pump Station

Award of Merit 2011

Municipal Engineering Category

Consulting Engineers
of British Columbia

Abbotsford Mission Water &
Sewer Services
Dickson Lake Upgrades

Award of Excellence 2009

Municipal Engineering Category

Association of Professional
Engineers & Geoscientists of
British Columbia

Award of Excellence 2009

Municipal Engineering Category

Consulting Engineers
of Canada

District of West Vancouver
Eagle Lake Membrane
Water Treatment Facility

Award of Excellence 2009

Municipal Engineering Category

Consulting Engineers
of British Columbia

Gold Award 2009

Water & Wastewater Category
American Council of Engineering
Companies of Washington

Honor Award Local Civil Engineering Achievement 2009

American Society of
Civil Engineers

King County, Washington State
Design/Build of the
Brightwater Marine Outfall

In-Situ Monitoring of Pipe Bursting Loads

Opus DaytonKnight under the National Research Council's Industrial Research Assistance Program, and in cooperation with the University of Alberta, has managed and funded a research effort on trenchless pipe bursting.



The goal of the research was to develop an understanding of the impacts pipe bursting would have on the installed pipe and the ground deformation.

This was undertaken to establish the level of structural degradation of high density polyethylene pipe during installation to ensure long term pipe design goals were not compromised. Ground deformations were monitored to establish surface impacts resulting from the pipe cavity information.

Opus DaytonKnight was incorporated in British Columbia in 1965. The company is made up of professional engineers and technicians. Management rests with senior engineers who are active in the day-to-day activities of the organization.

Fields of specialization include sewage collection, treatment, disposal, and reclaimed water reuse; water supply, treatment, and distribution; stormwater management; solid waste management; SCADA systems; trenchless technology; and asset management.

OFFICES:

#210-889 Harbourside Drive,
North Vancouver, B.C., Canada, V7P 3S1
Phone: 604-990-4800; Fax: 604-990-4805
Email: info@opusdaytonknight.com

#305-2722 Allwood Street,
Abbotsford, B.C., Canada, V2T 3R7
Phone: 604-852-9256; Fax: 604-852-9240
Email: abbotsford@opusdaytonknight.com

#308-809 Manning Road,
Calgary, A.B., Canada, T2E 7M9
Phone: 403-207-6000; Fax: 403-207-6045
Email: calgary@opusinternational.ca

#80 Bishop Drive,
Fredericton, NB, Canada, E3C 1B2
Tel: 506-451-0055; Fax: 506-451-4838
Email: fredericton@opusinternational.ca

#255-1715 Dickson Avenue,
Kelowna, B.C., Canada, V1Y 9G6
Phone: 250-868-4925; Fax: 250-868-4923
Email: kelowna@opusinternational.ca

#101-2700 Queensway Street,
Prince George, B.C., Canada, V2L 1N2
Phone: 250-562-0038; Fax: 250-562-0058
Email: princegeorge@opusdaytonknight.com

#1-3772 Fourth Avenue, Box 939
Smithers, B.C., Canada, V0J 2N0
Phone: 250-847-1913; Fax: 250-847-1914
Email: smithers@opusdaytonknight.com

#850-1185 West Georgia Street,
Vancouver, B.C., Canada, V6E 4E6
Phone: 604-684-4488; Fax: 604-684-5908
Email: vancouver@opusinternational.ca

#401-707 Fort Street,
Victoria, B.C., Canada, V8W 3G3
Phone: 250-952-5640; Fax: 250-920-5620
Email: victoria.office@opusinternational.ca

For further information: Please contact: Victor Wong,
PEng, at our North Vancouver Office. Or visit our
website at: www.opusdaytonknight.com

*As of 15 Nov 2010 Dayton & Knight Ltd. became Opus DaytonKnight Consultants Ltd.

Trenchless Technology



OPUS DAYTONKNIGHT



- **Horizontal Directional Drilling (HDD)**
- **Pipe Bursting**
- **Micro-tunnelling**
- **Pipe Ramming**
- **Pipe Jacking**
- **Pipe Rehabilitation, Lining, etc.**

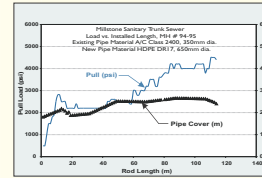
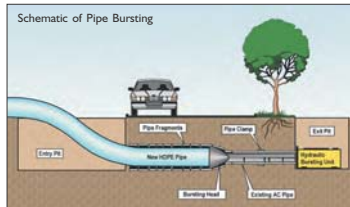
Benefits of Trenchless Technology

- **Environmental:**
Reduced impacts resulting from less surface disruption to environmentally sensitive areas.
- **Construction:**
Construction impacts are minimized when compared to open-cut construction. There is a reduction in import backfill and pipe bedding, and minimal trench construction improves long-term sustainability of pavement.
- **Safety:**
Site safety is more effectively managed due to localized stationary worksite.
- **Social:**
Trenchless construction minimizes traffic and noise impacts, two common complaints from the public due to traditional construction.
- **Costs:**
Where there are numerous existing services and/or where relatively deep excavation is required, trenchless construction can provide substantial cost savings.

What is Trenchless Technology?

Trenchless Technology involves the rehabilitation of existing underground utilities such as water, sewer, storm, gas, and electrical conduits, as well as the installation of new underground infrastructure.

Trenchless Technology uses methods that minimize the construction impacts associated with traditional open-cut construction methods.



Typical Plot of Pull Load and Depth vs Length

Projects Utilizing Trenchless Technology

City of New Westminster Sewer Rehabilitation Program

The City of New Westminster has an annual sewer renewal program for replacing structurally deteriorated sections of sewer or where existing sewers require an increase in size to meet future capacity.

Opus DaytonKnight completed the design, tendering, and construction management of a stage of the City's Sewer Rehabilitation Program, which involved 1600 m of relining (CIPP and Fold & Form) and 560 m of pipe bursting.



City of Abbotsford Cyril Sanitary Trunk Sewer

The City of Abbotsford's Cyril Sanitary Trunk Sewer Project was the third phase of a trunk sewer program to convey flows from South Abbotsford to the J.A.M.E.S. Sewage Treatment Plant.

The Cyril trunk section involved 1200 m of 750 mm and 1050 mm diameter trunk sewer at depths ranging from 5 m to 7 m.



Opus DaytonKnight completed the work in partnership with B. Cusano Contracting Ltd. using design/build. The project used a combination of PVC and HOBAS pipe; the HOBAS pipe was utilized on a 320 m tunnelled section beneath the City's arterial roads and beneath both the Canadian Pacific and the Southern Railway tracks.

- **Feasibility**
- **Design**
- **Construction Management**
- **Detailed Calculations / Review**
- **Closed Circuit Television (CCTV) Inspection & Review**

