

Vancouver, British Columbia

SkyTrain Guideway Design

CLIENT

British Columbia Transit
Vancouver, British Columbia

REFERENCE

Sam Robbins
MIS Manager

PROJECT FEATURES

- Elevated dual guideway
- Elevated stations
- Temporary maintenance area

SERVICES BY BergerABAM

- Route Alignment Design
- Civil and Structural Engineer
- Construction Support Services

PROJECT DATES

1982 to 1984

KEY STAFF

Jim Guarre
Bob Griebenow
Brian Garrett
Darrell Joque
Chuck Spry
Sue Johnson
Manfred Zinserling
Arnie Rusten
Elmer Ozolin



BergerABAM's conceptual designs were the first steps taken in the actualization of the dual-lane concrete guideway for the SkyTrain.

This two-phase project consisted of 13.3 miles of dual-lane concrete guideway that linked downtown Vancouver with outlying cities. Urban Transportation Development Corporation's automated light rail transit vehicles began full operation on the guideway late in 1985 with a system that included a double-tiered underground tunnel, 0.8 mile in length; an at-grade section, 2.2 miles long; and an elevated section, 10.3 miles long.

BergerABAM's involvement in the initial phase included design of route alignment and civil and structural engineering of the first 0.7-mile segment of elevated guideway, elevated stations, and temporary maintenance area. The second phase of the project included 9.6 miles of elevated guideway with BergerABAM providing civil and structural engineering of elevated guideway components.

The elevated dual guideway featured precast trapezoidal box beams spanning up to 150 feet. Transported to the site by specially fabricated trailers, the beams were erected onto cast-in-place columns and post-tensioned for continuity. Direct-fixation fasteners supporting the running rails were attached directly to inserts cast into the precast beam deck. Inserts cast into the beams also provided attachment for other subsystems, including the linear-induction motor reaction rail and power rails.

Subsequent to design, a team of BergerABAM resident engineers and technicians provided construction support services during fabrication of 1,114 guideway beams in a single contract.

Follow-up services for the \$800 million project also included change order control and resolution of technical problems during transportation and erection that allowed the SkyTrain to be commissioned within budget and on schedule in just 4 years.

[BergerABAM's transit experts have the insight to design guideway systems that are technically proficient, aesthetically pleasing, and cost-effective.](#)