



Vancouver Regional Rapid Transit Project

QUARTERLY

Fall 1985

No. 7



PIES at station platforms – p. 12

COMMENT



ALRT: a great system

The Vancouver Regional Rapid Transit project is a "Class A" winner. So impressive is this sleek, efficient people mover that I am certain the premier's comment during an 18½ minute ride from B.C. Place to downtown New Westminster that "an extension to Kelowna might be worth consideration", may well suggest more futuristic thinking than most of us are ready for. With the projected efficiencies in terms of automated high tech transportation of people, we in the Greater Vancouver regional transit area, may well be experiencing a prototype of transportation for the next century.

Over the next year, major adjustments in travel patterns, although initially causing some confusion and frustration will, I am certain, produce a transportation network second to none in the world. I might add, a level of service not available since the old B.C. Electric interurban cars were decommissioned.

Phase one from Vancouver to New Westminster is virtually complete. It makes ultimate sense to me that extensions first, to the people centre of Whalley in Surrey, which will increase ridership on ALRT by a predicted 15% or more and, second, to Coquitlam Centre, which will contribute another 8 - 10% in ridership on ALRT, are logical add-ons to our present program. This is also the safest way we can be sure to realize the anticipated growth factor in the financing formula agreed to (in principle) by the minister responsible for transit, the honourable Grace McCarthy and the Vancouver Regional Transit Commission.

I think we have a great system on the verge of impacting the Lower Mainland in a very positive way. We should, one and all, climb aboard ALRT and enjoy a ride into the future: the future of the greatest place to live in the world.

Mayor Don A. Ross, Chairman
Greater Vancouver Regional District

QUARTERLY

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TEXT: Norman Gidney, Lon Wood, Lyn Atkinson
PRODUCTION: Broadway Printers



Dillingham piledriver drops pile into riverbed in the Fraser, testing footings for ALRT bridge to Surrey. Patullo Bridge is in the background.

First work starts on ALRT Fraser bridge

The first work on the rapid transit bridge which will link New Westminster and Surrey has taken place. Dillingham of Canada conducted pile-driving tests and pile load tests on the Fraser River bed.

The ALRT bridge is scheduled to go to tender next spring. A construction start is set for the fall of 1986. It's part of the B.C. government's planned extension of the rapid transit system, and will be located a short distance downstream from the Pattullo Bridge.

Pile driving and load tests were done at the site of the piers for the cable-stayed bridge, to determine various factors in driving piles and load-carrying capacity in this area.

When the contract is awarded in 1986, the successful firm will need to drive a considerable number of piles to support bridge foundations. The information obtained from the tests should result in lower bids from contractors because the uncertainty of driving piles into unknown ground will have been removed.

Grace McCarthy, minister responsible for ALRT, said the work for the foundations and bridge superstructure will be let as a single contract in 1986. "One contractor will mean improved continuity and cost-saving during bridge construction," she said.

Premier announces park-ride for Coq.

Two park and ride lots will be built in Coquitlam to provide special service to ALRT for commuters living in the northeastern part of the Lower Mainland.

Premier Bill Bennett announced the \$5 million facilities will be built at the Coquitlam Centre and the Brunette Interchange on the Trans-Canada Highway.

He told the Coquitlam Chamber of Commerce that the park-and-ride lots will include space for up to 1,000 cars. BC Transit shuttle buses will carry commuters to New Westminster Station at 8th Avenue and Carnarvon Street.

The premier also announced a \$3 million engineering study into the feasibility of extending rapid transit to Coquitlam.

The study is the first step for a possible extension of the 22-kilometre phase one line between downtown Vancouver and New Westminster.

He added that if the decision to proceed with construction is made, it shouldn't take long to build it. "Coquitlam is an area that should be considered early," he said.

Earlier this year, a park-and-ride lot was announced for Surrey residents. It is under construction now at Scott Road and the King George Highway, site of a future station on the phase two extension of ALRT to Surrey. Tenders are to be called next spring for the bridge link across the Fraser River.

ALRT free in December

Rapid transit will offer the public free rides for much of December, Grace McCarthy, minister responsible for the project, has announced.

Vancouver's new ALRT line will be officially opened Dec. 11 but it isn't scheduled to go into full revenue service until Jan. 3, 1986.

For much of the month of December, service will operate free of charge, for two or three days a week, said Mrs. McCarthy.

"It will be a training time for staff with real passengers and a real system. It gives staff an opportunity to know what they are doing with real people."

The system has been undergoing testing and commissioning for much of the year and recently went into full-scale simulation of revenue service.



Minister responsible for rapid transit, Grace McCarthy, and Mayor Elmer Mercier of Prince George display special panel promoting Prince George which will appear in city's ALRT car, named *The Spirit of Prince George*.

The Vancouver rapid transit system is "The B.C. Spirit" and soon BC Transit will be christening each of the 114 rapid transit cars with the name of a BC municipality or region.

Prince George was the first community in the province to be so honoured in a ceremony in which Grace McCarthy, minister responsible for transit, and Mayor Elmer Mercier of Prince George participated.

"Our new marketing plan will refer to 'The Spirit' and everyone is, of course, 'Catching the Spirit,'" said the minister.

The naming program will feature the municipal crest or coat of arms on the exterior of a rapid transit car.

By the end of the year, each of the 114 ALRT cars will carry the name of a city, town, village, district or regional district in British Columbia. Examples would include "The Spirit of Nanaimo" or "The Spirit of East Kootenay".

In addition, an interior panel will carry photographs and information on the community: the area, population, industry, tourist opportunities, etc., together with the address of the industrial development commissioner or chamber of commerce.

Mrs. McCarthy said that while this program recognizes the interdependence of Greater Vancouver and communities throughout the province, it will also bring some very practical results.

"Millions of riders from many countries will be attracted to our state-of-the-art rapid transit system, particularly in 1986. While on board they will have an opportunity to learn something of the rest of British Columbia, its incredible potential as a place to holiday and to do business. Communities around the

province will benefit enormously from this exposure."

Engineers will discuss ALRT

A conference devoted to Vancouver's rapid transit system will be held Nov. 13-16 as a joint meeting of the Engineering Institute of Canada and the Association of Professional Engineers.

Many of the engineers, planners, architects and other professionals who worked on the rapid transit project will be speaking at the conference, scheduled for the Holiday Inn-Harbourside.

BC Transit vice-president Larry Miller will open the first day's sessions with a speech outlining the history of the project.

Project administrator Mike O'Connor will describe "The Vancouver ALRT System" and other speakers will focus on the community impact and the municipalities' roles.

Other more technical subjects will be covered, including sessions on the guideway design, stations, production of the guideway beams, construction and trackwork.

The conference is open to anyone interested in the Advanced Light Rapid Transit project. For registration information, contact Ann Lowrie, Association of Professional Engineers, 2210 W. 12th Avenue, Vancouver; telephone 736-9808.

Filipino Plaza on way

A \$50,000 landscaped plaza will be built along the rapid transit line near East 24th Avenue and Nanaimo in Vancouver by the Filipino community of the Lower Mainland.

"The Filipino community have responded very quickly to the B.C. Parkway's request for participation, and have prepared a design for a brick plaza and amphitheatre that will reflect



their cultural heritage," said Grace McCarthy, the minister responsible for the project.

Filipino Plaza committee chairman Emer Robles said the design of the four-block-long project allows it to be built in two stages. First phase, to open with the B.C. Parkway early next year, will be a 100-foot-square plaza, with brick planters and 130-seat amphitheatre.

"Our objective was to design an open space and a gathering place for people, a symbol of the Filipino community in the Lower Mainland and our contribution to Canada's multicultural mosaic," he said.



Filipino Plaza committee, headed by Emer Robles (at left), assembles around scale model of their project, which will be built in the B.C. Parkway just west of Nanaimo Station. Symbol of the committee is the "sari manok", a bird which figures in Filipino legend.

The plaza is to be accented in a colour scheme featuring the pinks and magentas, greens and golds of the tropical Philippines. Phase two of the project will feature several of the Philippines' "points of interest", natural and manmade scenic wonders reproduced in miniature.

When the Filipino community in the Vancouver area was approached last July about participating in the British Columbia Parkway, no one anticipated such a speedy response.

By late August, a Filipino Plaza Committee had been established, information and fundraising efforts were underway and a detailed design was ready for the chosen site in east Vancouver.

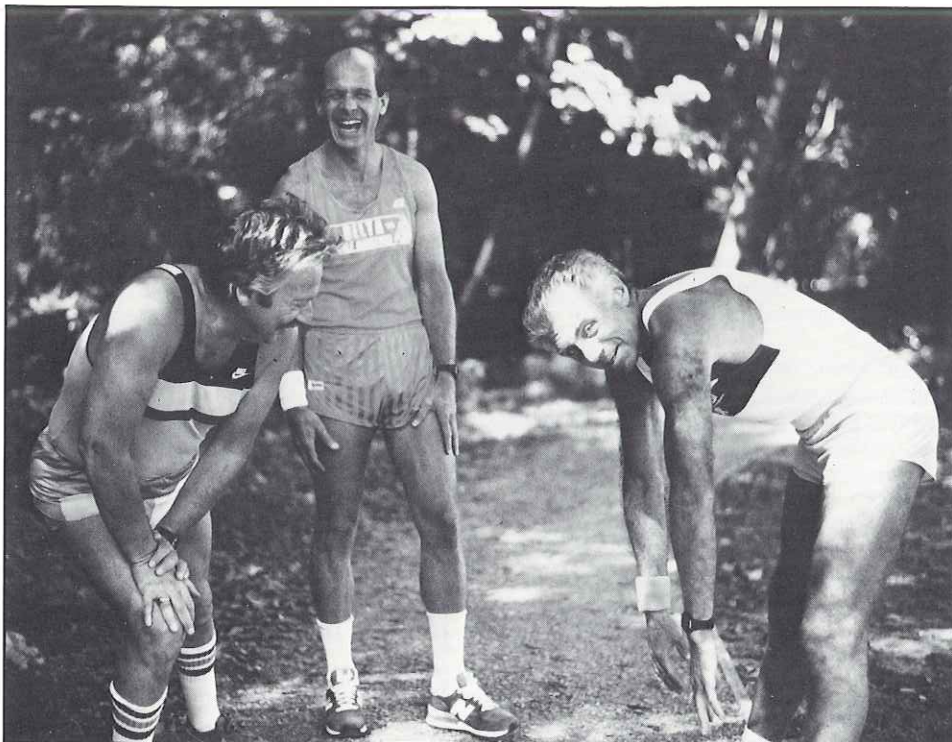
The board of directors of the B.C. Parkway Society, responsible for the over-all design and construction of the 19-kilometre linear park along the rapid transit line, gave its approval shortly after and the committee shifted into a higher gear, barely stopping to catch its collective breath.

"They've accomplished a tremendous amount in a very short time," said Philip Owen, president of the parkway society. The board was impressed with the quality of their project.

"Everybody was very positive about it and very optimistic. The over-all concept was very good."

The plan is for a landscaped plaza at Vanness and East 24th Avenue, just west of Nanaimo Station on the ALRT line. It was designed by Beter Morelos, chief designer for the Valdimir Plavsic Group of architects in Vancouver.

The small-scale replicas in phase two would bring to Vancouver such Filipino tourist attractions as the Mayon volcano, a perfect cone when viewed from all sides; and the carefully-stepped Banaue rice terraces. Other suggestions include the Pagsanjan Falls, the Chocolate Hills, which are almost perfect semi-



Why are these men smiling? From left, Mel Ross, Wes Gibbings and Byron Aceman are active runners, and have donated a water fountain to the parkway which will operate year-round, in freezing winter too.

Continued on page 5

BCIT students help parkway



Student waters BCIT landscape feature intersection, at Willingdon and South Beresford in Burnaby. It was a class project of the landscape horticulture students, who designed and built it themselves.

For students in the second-year landscape horticulture class at the BC Institute of Technology, the British Columbia Parkway project was a chance to leave their mark on a small corner of Burnaby, not far from BCIT.

Together, as a course project, they designed and landscaped a small section of the parkway, a feature intersection at Willingdon and South Beresford, about halfway between the Patterson and Metrotown rapid transit stations.

Fourteen students in Susan Murray's class were involved in the project, first suggested to BCIT by BC Parkway Society member Gerry Haslam, publisher of *The Province* which is a corporate sponsor of the parkway and the Adopt A Tree program.

Parkway landscape architect David Easton pinpointed half a dozen sites. Then, says Murray, "we went out as a class in February in the

pouring rain and looked at each site." Two appealed to the group: one at Gilley Avenue, east of the preview park, and the second at Willingdon, where the ALRT line and BC Hydro railway crossed the busy street.

The final choice was democratic. They voted on the two finalists, and by a one-vote margin selected Willingdon. It's located in an area of ordinary homes and warehouses, flat and featureless beside the tracks, but Murray says the class believes it has potential. Willingdon was recently widened and upgraded, and in the future will be one of the gateways to Burnaby's Metrotown regional town centre.

After selection followed a site analysis. The students plotted shade patterns, examined the soil and the surroundings. Easton provided some landscape guidelines — BC Hydro railway engineers needed to maintain a certain cone of vision at the intersection, for example — and outlined the parkway design standards, including colours, kinds of plantings, materials, and so on.

The students did a colour concept of their landscape projects, which Murray critiqued. Then they did working drawings, a planting plan. Easton provided some budget guidelines within which each student had to execute his or her design. By now it was mid-March.

Their instructor picked four of the 14 individual plans. "They were each good enough to be constructed," she says. Final choice was by the parkway staff, and the winner was John Pearson.

In April, the class started on the shovel-and-wheelbarrow work at the site, spending every Thursday from 10:30 a.m. to 3:30 p.m. for six weeks. Half worked on the east side of the street and half on the west side.

Each week, tools and materials had to be transported to and from the site. Sometimes they stayed late to finish one part or another.

"Burnaby donated a number of things, like sand and reinforcing bars to hold the railway ties in place," says Murray. "Burnaby was very, very helpful in providing some odds and sods."

She says the project was a useful exercise, and fitted the practical, hands-on course content of landscape horticulture at BCIT.

"That project gave them a sampling of anything and everything they might have to include — a retaining wall, edging, placement of top soil, crushed lime."

The finished project is a compact but varied garden. It has three types of rhododendron, a pink flowering dogwood and a cherry tree that will reach more than 20 feet when mature.

Creeping cotoneasters, lily of the valley and viburnum have been planted. As a special feature, Pearson specified *Genista Vancouver Gold*, a low broom-like flowering plant with bright yellow flowers.

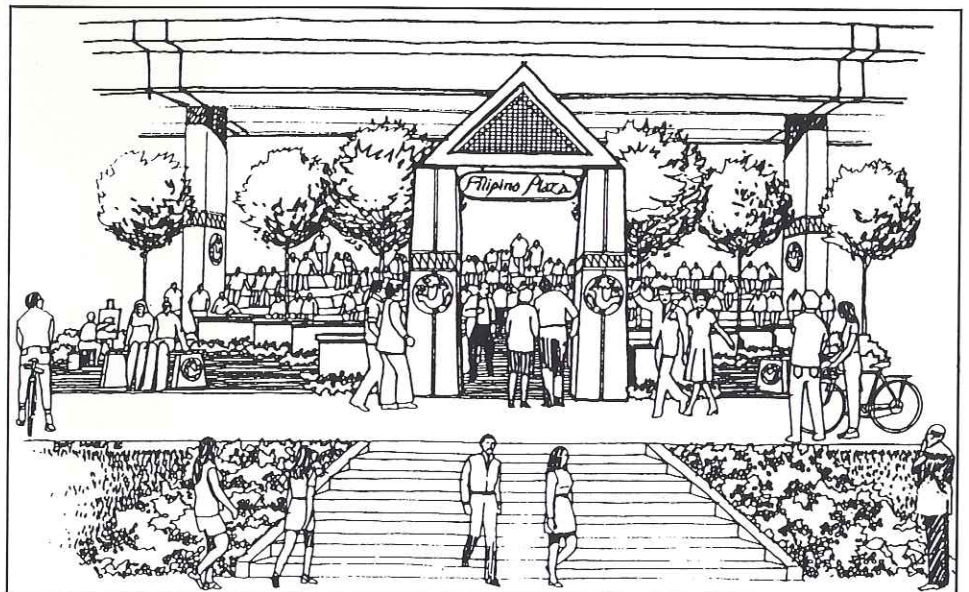
Plaza will be near Nanaimo Station

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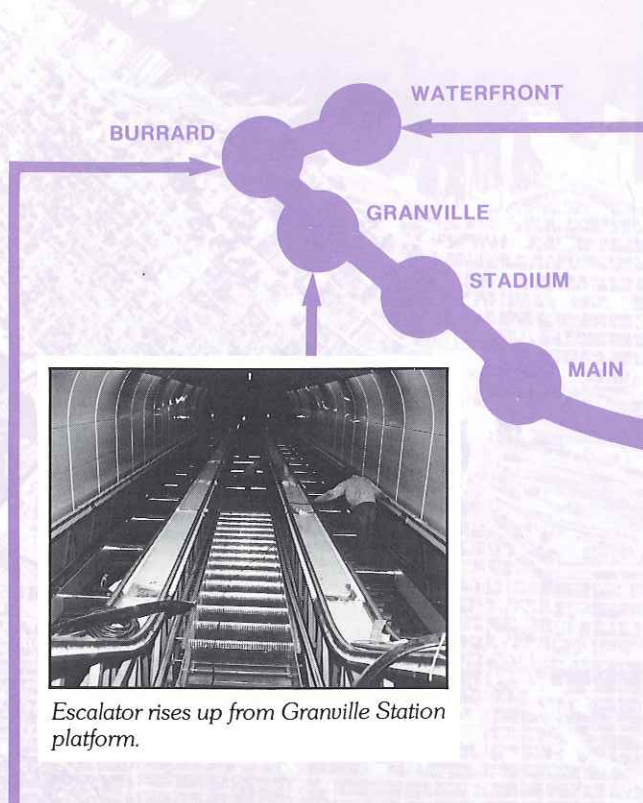
spheres; and jeepney and kalesa gardens, to celebrate two uniquely-Filipino methods of wheeled transportation.

It seems to be the right project at the right time for the 17,000 Filipino-Canadians living in the Vancouver area and Fraser Valley. "It's a project of the whole community," says committee treasurer Danilo Isaac, "from seniors to teenagers."

Many people are buying some of the 2,000 bricks needed for the planters which define the amphitheatre and plaza, the main fundraising activity for the project at \$25 each. Already, "they're selling like hotcakes," says committee vice-chairman Butz Santa Cruz.



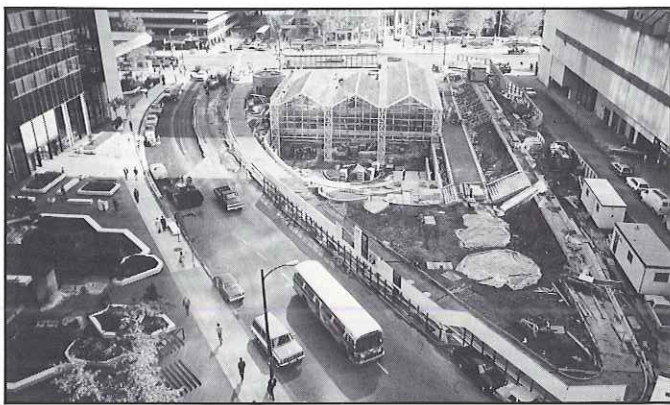
Drawing by designer Beter Morelos shows what the Filipino Plaza will look like, with plaza and amphitheatre beyond the archway.



Sails of Canada Place rise beyond west entrance of Waterfront Station.



Escalator rises up from Granville Station platform.



Bus passes by glass-roofed Burrard Station, Bentall Centre at left, Royal Centre at right.



Train races along guideway, past Croatian Community Centre under construction.

BROADWAY



ALRT train pulls into Broadway Station during testing.

NANAIMO



Steamroller paves blacktop for bus loop.

29th AVENUE

JOYCE



Stair forms go in at Royal Oak Station.



More to come

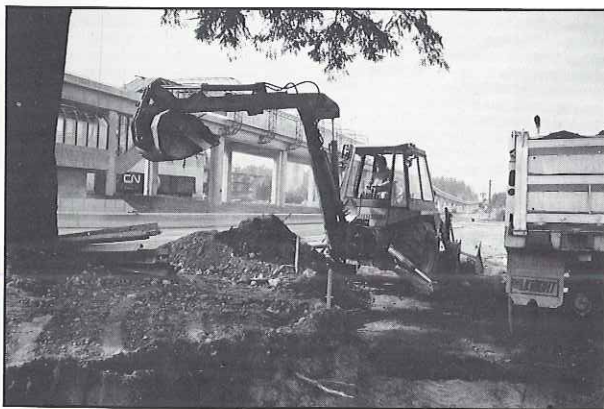
Construction progress



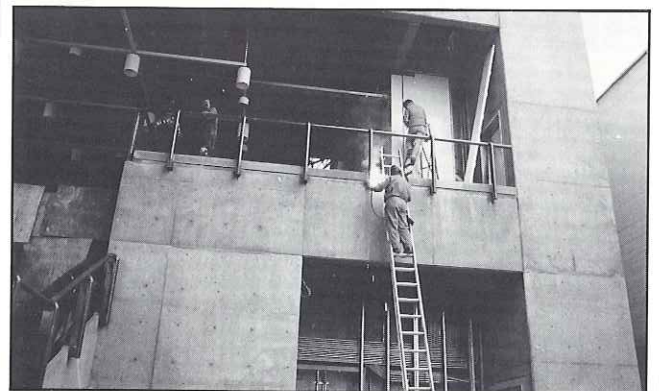
On south, 29th Avenue Station opens onto Slocan Park.



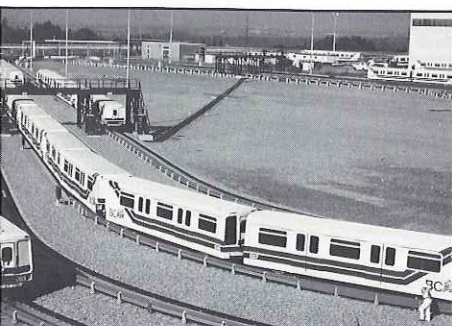
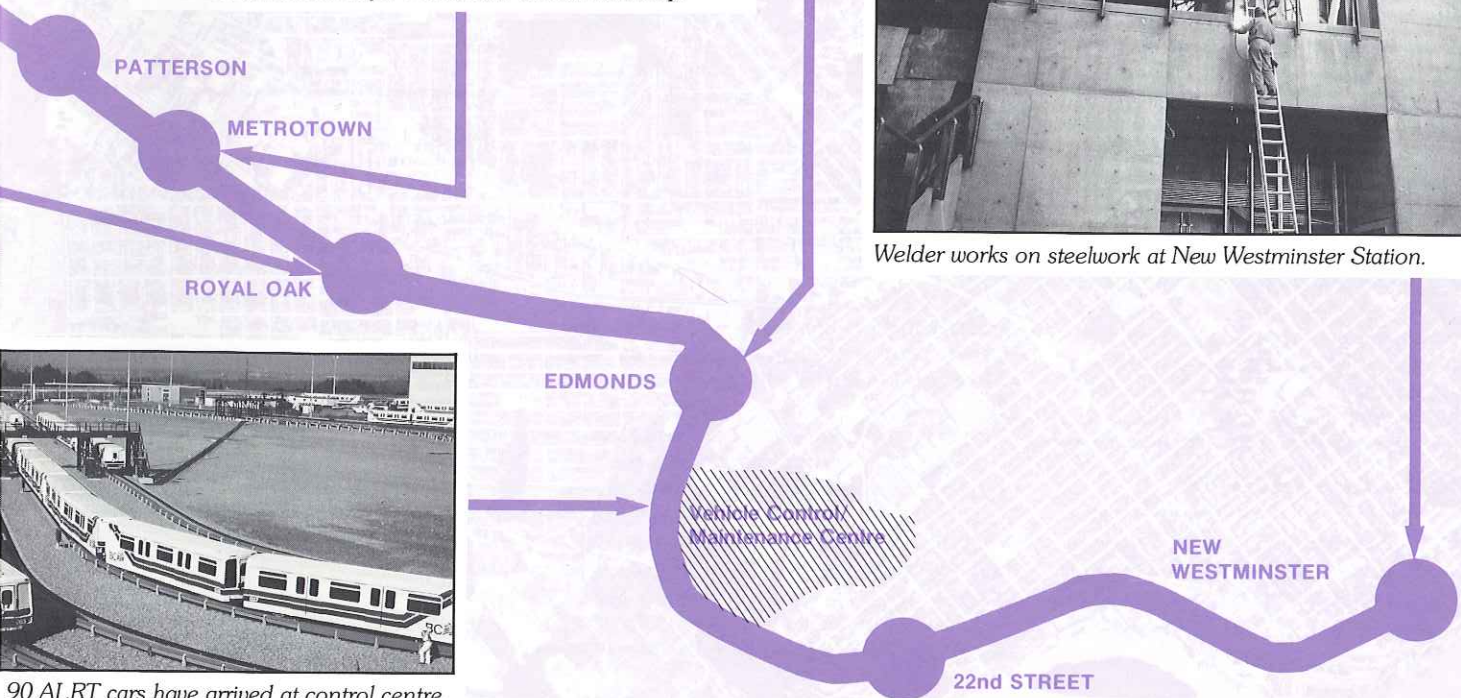
Bulldozer levels ground for bus loop at Edmonds Station.



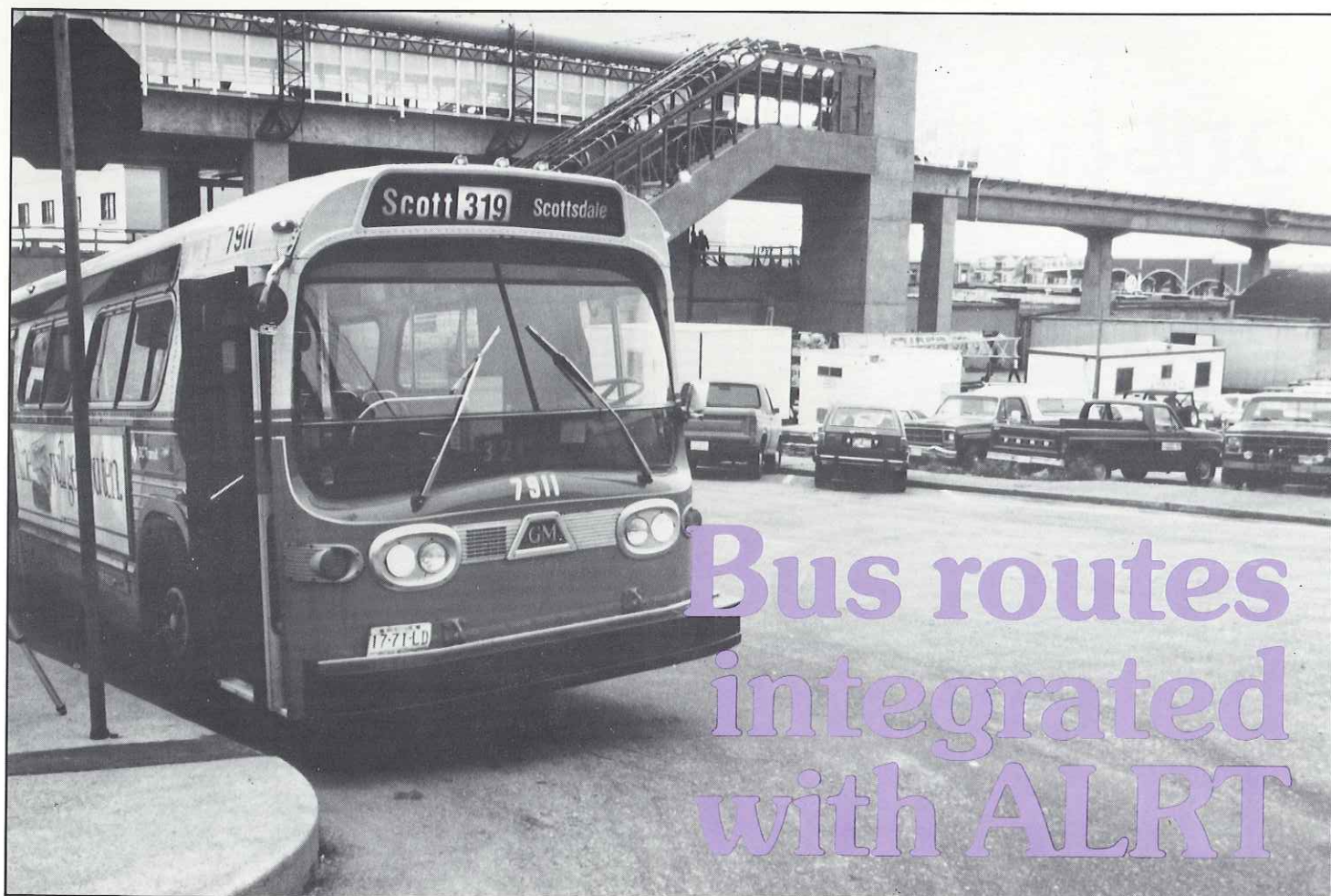
Excavator moves earth for Metrotown Station bus loop.



Welder works on steelwork at New Westminster Station.



90 ALRT cars have arrived at control centre.



Scott Road bus at New Westminster Station, terminus of the phase one rapid transit line. In addition to regular BC Transit bus routes, special

shuttle services from Scott Road in Surrey, and from Brunette and Coquitlam Centre will connect with ALRT here.

ALRT, buses, Sea-Bus form integrated system

What happens to the BC Transit bus system when ALRT starts operating?

The diesel and trolley buses that carry 150,000 passengers a day around the Vancouver region will be an important component of the new, integrated transit system.

Some routes and schedules will change to fit in with ALRT, but buses will continue to be the workhorse of the transit system. It's expected that four out of five ALRT riders will be taking a bus for part of their trip.

It won't happen overnight in January, when rapid transit begins operating. The bus system changes will be phased in over more than a year.

Residents of Vancouver, Burnaby and New Westminster will be the first to notice the changes. Some bus routes and schedules will change early in 1986.

Faster travel times

The new integrated transit system — buses, trolleys, Sea-Bus, rapid transit and handy-DART for disabled people — will mean 35 to 50 per cent faster travelling times for most transit riders.

It's been designed with three main objectives:

- Maximize the use of ALRT, both for commuter trips and shorter station-to-station rides.
- Provide bus service to the stations as directly as possible and eliminate duplicate service.
- Increase local bus service with convenient transfers between routes.

A grid network

The early 1986 integration plan concentrates on the three-municipalities directly served by the 22-kilometre phase one line. Here is where the transit system now has the highest ridership and where the greatest savings in bus operating costs can be achieved.

In the city of **Vancouver**, the bus network will remain a grid, with north-south routes, such as the 16, 21 and 24, serving as the main rapid transit feeder lines. Some route changes will be made to bring these buses to the station.

Other bus routes in the southeastern part of the city — 26, 27, 28 and 29 — will be rapid

transit feeder lines, terminating at the stations.

From the southeast part of the city, there will be reductions in travel times of up to 35% for riders going to and from downtown. Destinations in Burnaby and New Westminster will be more accessible.

Trolleys extended

East-west buses will continue to provide crosstown service on virtually unchanged routes. Some routes will serve two functions, as crosstown bus and rapid transit feeder line: for example, the 9 Alma/Broadway and the 25 Blanca/Brentwood.

In addition, the 19 Kingsway trolley will be extended to Metrotown Station in Burnaby along with the 49 UBC/Metrotown bus. The 41 trolley route will be extended to Joyce Station.

In **Burnaby** and **New Westminster**, a major re-organization will concentrate bus routes on the ALRT stations. These focal points will bring several bus routes together, for easy transfers and little waiting.

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Major changes in New West, Burnaby

Continued from page 8

Eight bus routes will connect at Metrotown, the heart of Burnaby's new regional town centre plan, and five at Edmonds in eastern Burnaby. Patterson and Royal Oak stations will each have a single bus route connecting with ALRT.

In New Westminster, a more efficient grid network is planned, which focusses bus routes on New Westminster's two rapid transit stations. Ten bus routes will serve New Westminster Station at 8th and Columbia — the terminus of the rapid transit phase one line — and six will connect at 22nd Street Station.

East-west routes will focus on 22nd Street Station, while north-south routes will centre on New Westminster Station.

Other changes affecting Burnaby and New Westminster:

- 154 Mundy and 155 Como Lake routes from Coquitlam will provide a shuttle service through New Westminster, connecting Sapperton and the east end of the city with uptown and the 22nd Street Station.

- Rapid transit will replace the 112 Twelfth Street and 106 Sixth Street express bus service on Kingsway between New Westminster and downtown Vancouver.

Electric trolleys extended

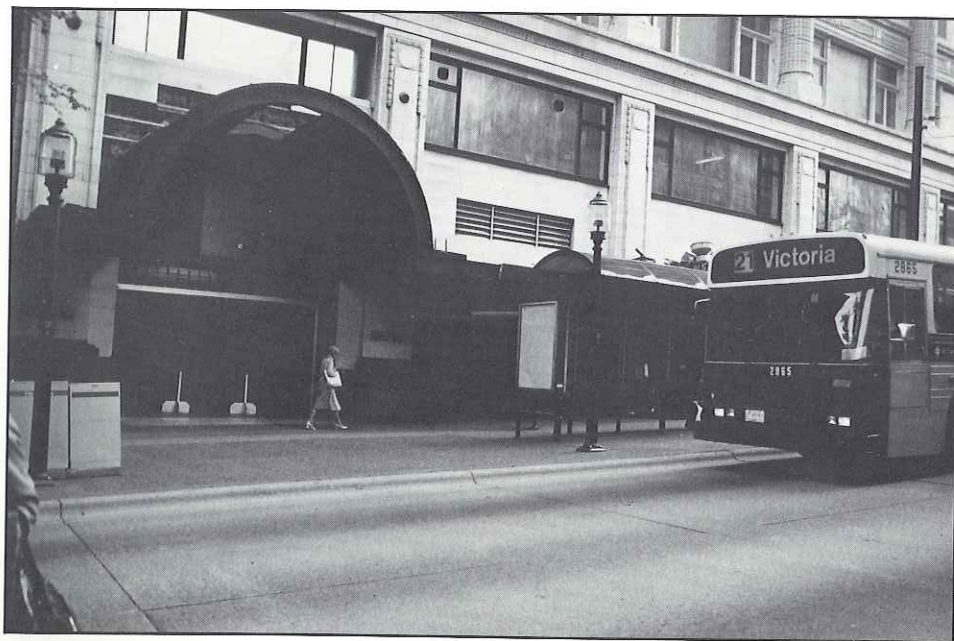
A key part of the bus-rapid transit integration plan involves the trolley buses, the electric vehicles which are the backbone of the transit system and carry 60% of the system's passengers.

A \$4.5 million trolley extension — the only trolley expansion anywhere in North America — is now under way to connect trolley routes more efficiently with rapid transit.

- 29th Avenue Station will be the new terminus for the 16 Renfrew trolley, which now operates to Kingsway and Earles. This portion of the route will be replaced by diesel bus service.

- 24 Nanaimo/4 Fourth trolley buses will connect at Nanaimo Station.

- Two kilometres will be added to the 19 Kingsway trolley line, bringing trolleys into Burnaby for the first time, to Metrotown Station.



Victoria trolley approaches main entrance to Granville Station on ALRT. Station is approached through Bay department store, below store's basement level.

ALRT accessible for disabled riders

By Lynn Atkinson

Vancouver's new light rapid transit system is ready to swing into operation in a short time, the latest in people-moving technology. But how does it measure up in terms of meeting the needs of the travelling disadvantaged?

"Very well," says BC Transit's consulting rehabilitation engineer Katherine Hunter. "Vancouver's new Advanced Light Rapid Transit system compares very favourably with other transit systems in the world.

"Wherever possible, the system is barrier-free for the convenience of those with visual, mobility or hearing impairments."

Several key features including integration with handyDART, elevator access in most stations, Rapid Transit Attendants and careful design of stations and trains that combine to ensure the elderly and travelling disadvantaged a smooth ride with a minimum of complications.

"And most importantly for wheelchair users," adds Hunter, "the gap between platform and train is one of the smallest for any transit system in the world — approximately 50mm or two inches either way.

"Under normal operating conditions trains are level with the platform."

For those who use handyDART, BC Transit's door-to-door transportation service for the disabled, to get to the station there's elevator access to the train platform at all but one station (Granville) and this will be added in the near future when development goes ahead around the station. When the system begins operation in January, travelling disad-

vantaged people can expect to take a shuttle bus between Granville Station and a nearby station.

handyDART drivers will have maps indicating drop-off and loading bays and elevator locations, notes Hunter. Dispatchers have been briefed on the system so they can better help people determine if rapid transit suits their travelling needs.

Special security features such as closed-circuit television, elevator intercom systems, emergency telephones both in trains and at platform level and brightly colored tactile buttons, handrail and platform warning strips for the visually impaired are a big improvement over conventional travel systems, says Hunter.

Another first for Vancouver, rapid transit attendants or RTAs, will also mean better service for everyone, especially the travelling disadvantaged. The automatic train control system, currently in use on other rapid transit systems around the world, lets ALRT take attendants out of the front cabs and allows them to circulate on trains and stations where they can do the most good — assisting passengers with boarding, transit information and providing a protective presence.

Because safety is a paramount concern, all RTAs and police, fire and security staff have had specific training in assisting the travelling disadvantaged.

And in case anything goes wrong, says Hunter, closed-circuit television monitoring all station platform, escalators and elevators will ensure that passengers are always under someone's eye when they use rapid transit.

A kit of parts

When you see the distinctive stations on the Vancouver rapid transit line, you're looking at the parts and pieces of a "systems approach" to design that blends the disciplines of engineering and architecture.

Or more simply, it's a giant Meccano set, a grown-up version for engineers, architects and contractors of the toy building set that allowed kids to build almost anything out of standard nuts and bolts, bars and metal bits.

Labelled the "kit of parts" concept by rapid transit chief system designers, Allen Parker & Associates of Vancouver in a joint venture with Architektengruppen U-Bahn of Vienna, it's a compromise of functional needs and the desire to build an attractive rapid transit system, all on a budget of \$64 million for 15 stations.

It provided a basic toolbox of durable materials, forms and a palette of colours which could be combined or modified to meet differing site conditions for underground, grade-level or elevated stations along the 22-kilometre route.

Rapid transit design usually follows one of two schools: The 20-year-old Montreal Metro exemplifies one — unique stations, each designed by a different architect, with different



Blending architecture, engineering

treatment of materials, finishes and colours. The newer Edmonton and Calgary LRT lines adopted a more rigorous approach, following the greater design uniformity of European rapid transit systems.

BC Transit decided on a uniform design to save as much as possible on construction costs and to keep control of station designs, says David Calver, manager of design planning for the rapid transit project.

"Where there were economies of scale, we wanted to take advantage of that. We came up with this modular system, a big Meccano set."

While cost was the main factor, a standardized design was chosen for other reasons as well, including ease and economy of maintenance, and providing a strong system identity, making it as easy as possible for passengers to find their way around the stations and the system.

The design principle carries through from the basic structure that holds up the station roof and platform to graphics and small items such as seats, trashcans and ashtrays.

"Everything fits together in a modular way," says Calver.

The basic building units are 1¼ metres (four feet) wide, because this is common to other off-the-shelf systems such as lighting. The expanded diamond mesh metal panels which form the walls of the stations are 1¼ metres wide, for example.

One of the most distinctive features of the kit of parts, and which provides the ALRT system with an architectural "signature", is the tubular steel hoop truss.

They wrap around the stations like a letter

C on its side, one every 10 metres. On a typical 80 metre long station platform, 60 metres of canopy — seven hoop trusses — provide protection for four-car trains.

The hoop truss — similar to the structures arching over highways that carry signs and lighting — came out of the need for a barrier-free station platform, unobstructed by supporting walls and columns and the requirement to provide some side weather protection.

The designers came up with the novel approach of using the standard concrete box beams which the trains run on to hang the stations on as well. The hoop truss takes the weight of the platform roof and walls, lighting and signs.

"Everything's hung on skyhooks," jokes Calver.

In developing ALRT's kit of parts, the designers researched all kinds of materials and examined possible uses in the system for steel, concrete, brick, tile and glass. Local products were preferred where possible.

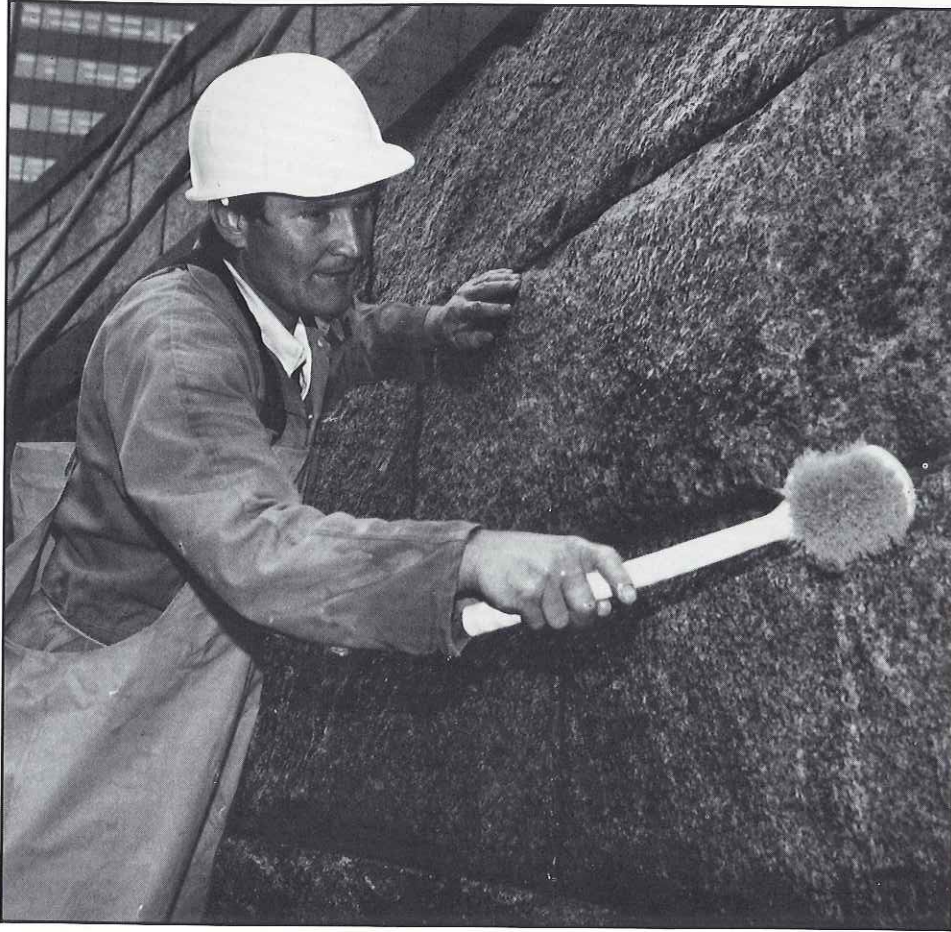
Very specific guidelines came out of this research. For example, there's very little glass in the stations. It's expensive and is subject to vandalism and maintenance problems. Instead, the metal mesh product was specified. It provides good visibility and adequate protection against Vancouver's wet and windy weather.

While the kit of parts produced an economic, durable design ethic for rapid transit, it also made a distinctive "architectural statement". And resulted in a transportation system that will be easy for passengers to find their way around.



Enamelled panel is hoisted into place in ceiling of Waterfront Station.

They take their job for granite



Stonemason Frank Harangby brushes mortar joints between granite blocks in wall, part of Burrard Station in downtown Vancouver. Centuries-old craft of stonecutters met computer-age rapid transit here.

By Lon Wood

Frank Mahovlich takes his job for granite — because he loves the natural qualities of the hard igneous rock.

"Of the scores of new buildings going up in Vancouver it is such a pleasant surprise to me that so many are being done in granite," says Mahovlich. "It's a nice trend."

Mahovlich came to Canada 25 years ago as a teenager from his native Yugoslavia. Today, Mahovlich Stone Masonry Ltd. of Burnaby employs 20 people. Six are working on Burrard Station, the "flagship" of Vancouver Regional Rapid Transit's 15 stations.

Most people are familiar with granite's distinct crystalline appearance — a blend of quartz and orthoclase or microcline — but the 44-year-old Mahovlich appreciates its deeper qualities.

"It looks good," he said, "but it is also easy to maintain and will last forever."

"Just look at the old courthouse, the old post office, the Royal Bank at Hastings and Granville or several of our old churches. This is the old style we are capturing for Burrard Station."

Burrard station was designed by Alan Hart

of Allen Parker and Associates to give the illusion it was carved out of the ground, albeit a granite quite unlike the sandstone actually below the surface.

"Where we cut into the ground, we gave the feeling we were cutting into granite, chiselled from the ground," said Hart.

Mahovlich said it would have been easier to place random-sized granite chunks, but that the challenge of the squared ashlar technique — using stones of uniform sizes — promised results in the tradition of the city's earlier granite buildings.

"When you go to meet such a challenge, you find that out of 10 guys, only one is good enough to be a stone cutter," said Mahovlich, who puts in a 14-hour day working with the architect and placing the stones with his crew as well. "The stonecutter has to have artistic ability, too."

Mahovlich crews have worked on the courthouse conversion to art gallery and Daon's Park Place. When the Burrard Station is completed, they will move on to install granite at Granville Station (ALRT's other underground facility); the waterfront Pan Pacific

hotel and the new Bank of B.C. building at Georgia and Hornby.

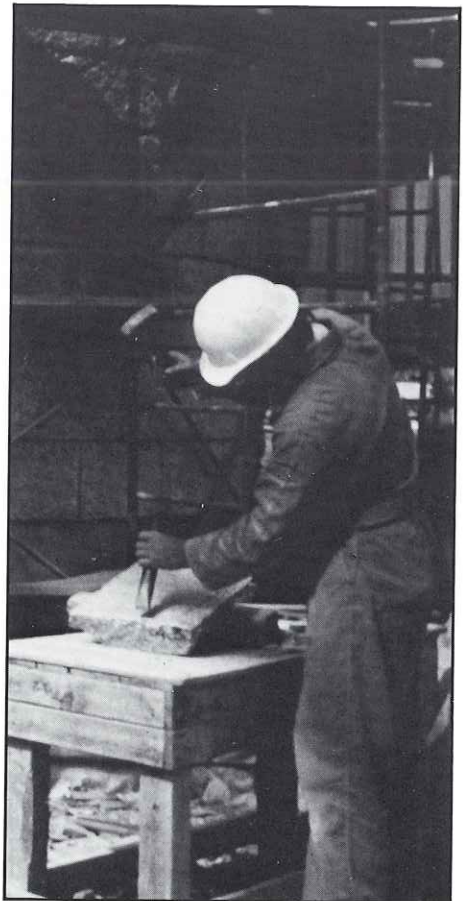
"There's a Scottish saying that the stonemason is on the move all the time," says Ron Gordon, a member of the Burrard Station team which included Fred Meyer, Tom Bulic, Campbell Graham, Walter Brolic and Frank Harangby. "It goes like this:

"Behold the mason on the tramp,
A spectacle of woe;
The trowel and catchie in his hand,
The Lord knows where he'll go."

Gordon, who hails from the all-granite village of Aberdeen in Scotland, has worked on local projects ranging from relocation of the former Royal Oak Funeral Home on Kingsway in Burnaby, to the Stanley Park seawall.

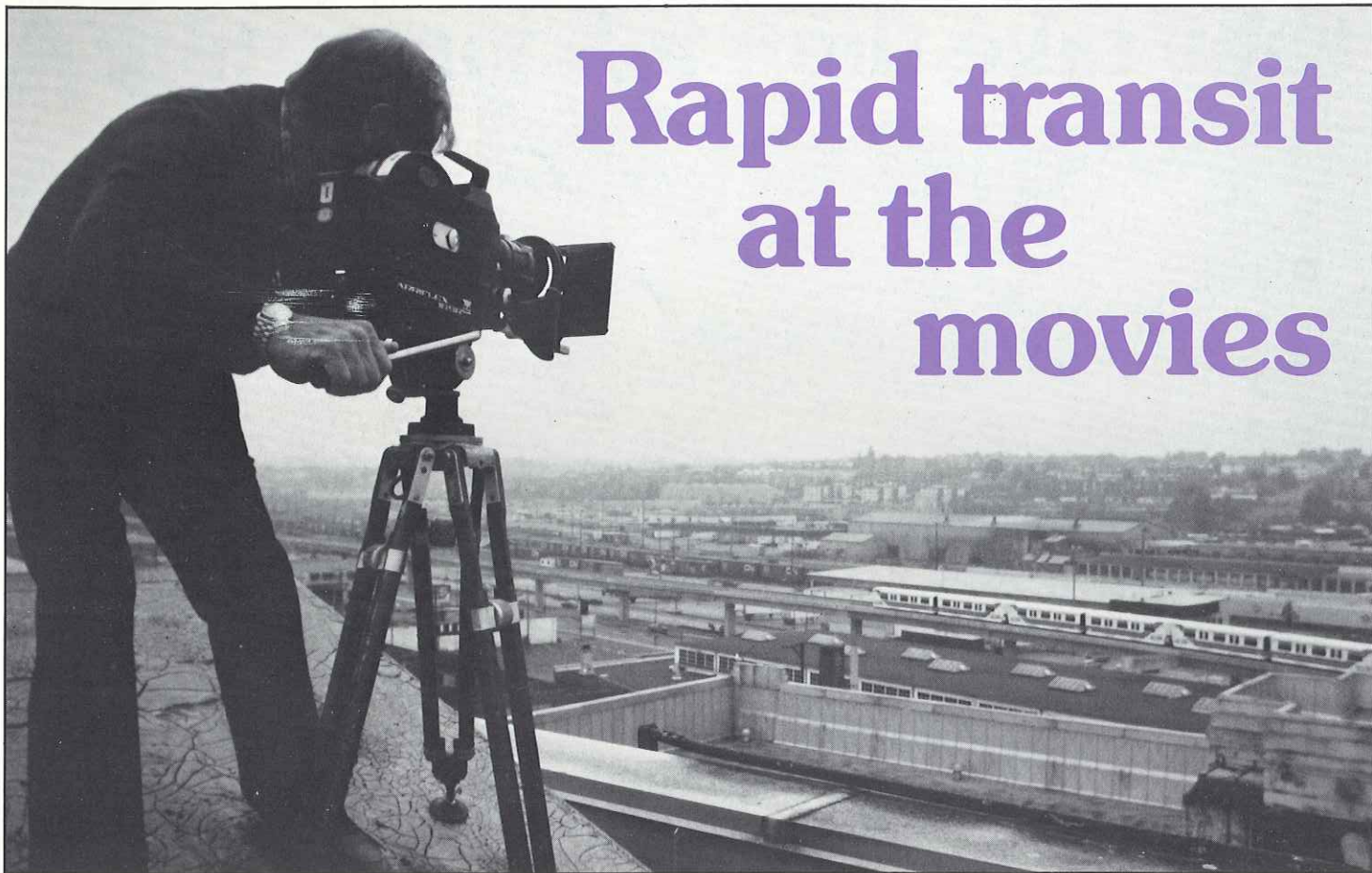
"Burrard Station is quite different," he said. "There are contours that create a real challenge. Shaping slabs of granite six or seven inches thick takes great care and attention. It has to be exactly right."

The granite is from India, distinguished from domestic granite by a rich, dark vein, and the fact it comes in sizes suitable for ashlar construction, rather than the random shapes — or fieldstone — found in B.C.



Using hammer and chisel, Frank Harangby of Mahovlich Stone Masonry Ltd. shapes granite block to curves necessary to face Burrard Station ventilation shaft.

Rapid transit at the movies



From perch atop VIA Rail station on Main Street, cameraman focuses on speeding rapid transit train, travelling along Terminal Avenue section

of ALRT line. Footage will form part of BC Transit film on the project, entitled *Going to Town*.

The Hollywood beat is a tough assignment. Trying to accommodate the demands of moviemakers while testing and commissioning Vancouver Regional Rapid Transit can create some real headaches.

"Since July there have been six film crews plus our own, JEM Productions, which is doing the historical documentary on ALRT," said community relations manager Lorne O'Connor. His acting is limited to the role of

middleman between film companies and the people building and testing the rapid transit system. "They're producing everything from commercials to feature-length Hollywood epics."

The films are at various stages of production, some in initial planning and others into shooting of film footage. The shortest is a four-minute "ride" from the North Shore via Sea-Bus, then via ALRT along the entire 21.4

kilometre route from Waterfront Station in downtown Vancouver to New Westminster Station in the heart of the Royal City.

"It was shot non-stop with three cameras at two frames per second on a sunny August 29," said O'Connor. "It is a promotional piece that will likely be used worldwide."

Other productions include *Running Man* starring Christopher Reeve of *Superman* fame, *Danger Bay*, a half-hour weekly adventure series produced locally by the CBC for Canadian TV and the U.S. Disney channel, segments for a North American and European markets Tourism Canada series by Boardwalk Productions, and an Independent Productions Ltd. film covering transportation in British Columbia for showing at the BC Pavilion during Expo 86.

"There are a lot of changing elements which make the process a 'hurry up and wait' one," said O'Connor. "Variable factors include the weather, the actors, support and technical people, site locations, engineering, the constraints of construction and testing and commissioning. Then there are political considerations either local, provincial or federal."

"It takes many hours with shoots and re-shoots. Imagine, for example, a tree branch up in front of the camera. It's clipped to a stand and someone is constantly rearranging the plastic dogwood buds."

PIES protects passengers at station platforms

PIES has been installed at all 31 station platforms on the Vancouver Regional Rapid Transit line, to provide added protection for passengers at station platforms.

The initials stand for Platform Intrusion Emergency System. It's an alarm which will trigger an immediate halt of trains if someone or something falls onto the tracks at a station.

It's a wide flat plate, running the length of the station platform, installed between the running rails on either side of the Linear Induction Motor reaction rail in the middle of the tracks.

If a person or object falls onto the tracks at a station platform, PIES alerts the vehicle con-

trol centre and automatically stops trains approaching the station.

The system is wired directly into the main computers which direct train movements throughout the 22-kilometre system. On receiving a PIES signal, they instantly issue a command to the computer on board the ALRT cars to set the emergency brakes.

It all happens much faster than it would take a human operator to issue the stop order.

Tom Parkinson, deputy project administrator for rapid transit, and the man who designed the system, says it's unique among rapid transit systems.