ARVID ERIK PEDERSEN, P. ENG.

Professional Experience Profile

Arvid Pedersen's specialty is the planning and design of ports and marine structures and coastal engineering. In addition to his experience with VJA, he has over five years of research and consulting experience in coastal engineering along with over nine years of experience in planning and design of industrial and commercial projects, and ports and marine facilities. Arvid Pedersen has worked on a number of challenging ports and marine projects in Canada and abroad. His experience includes studies, planning, design, co-ordination, and management of larger development projects and environmental studies.

Education & Professional Affiliations

- 1973 M.Sc. Civil and Structural Engineering, Technical University of Denmark
- Registered Professional Engineer of British Columbia
- Member, Danish Association of Civil Engineers

Professional Employment Record

1987 - Date	**Villholth Jensen & Associates Ltd.** Vancouver, BC Vice President
1981 - 1987	Sandwell Inc. (formerly Swan Wooster Engineering Co. Ltd.) Vancouver, BC
1979 - 1981	Hostrup-Schultz and Sorensen Copenhagen, Denmark
1978 - 1979	Christiani and Nielsen Ltd. Copenhagen, Denmark
1973 - 1978	Danish Hydraulic Institute Copenhagen, Denmark

Technical Publications

Port Development for Saint-Louis, Senegal. International Conference on Coastal and Port Engineering in Developing Countries, China, Sep. 1987.

Wave Run-up on Composite Structures. Coastal Engineering and Coastal Processes on the Canadian West Coast and the Beaufort Sea, Feb. 1986.

Foreshore Treatment as a Method of coastal Protection. Coastal Zone 85, July 1985.

Sedimentation Study for the Proposed New Port of Saint-Louis, Senegal. Canadian Coastal Conference, August 1985.

An Engineering Investigation of the Estuary of the Senegal River. Canadian Coastal Conference, May 1983.

Representative Projects

Planning and design of new rail bridge protection pier system.	British Columbia
Planning and design of ferry terminals and automated ferry ramps and gangways at Horseshoe Bay, Tsawwassen & Swartz Bay ferry terminals.	British Columbia
Inspection, planning, and development of small crafts harbours and marinas.	British Columbia
Design of new ship loading system for existing grain terminal.	Vancouver, BC
Planning and design of tanker terminal for bulk water.	Whalen Lake, BC
Planning and design of supply port for mine development and operation.	Papua, New Guinea
Site investigations, planning, and design of new general cargo port.	Sines, Senegal
Design of grain terminal.	Prince Rupert, BC
Study of oilfield development and production structures.	Beaufort Sea
Planning and design of rubble mound breakwater and shore protection.	California

Selected Projects

Ports & Marine Structures

The following are some of the ports and marine terminal projects Arvid Pedersen has been involved in.

CN Rail: Project Manager responsible for planning, establishing design conditions, and design of a new bridge protection pier system for CN's Railway Bridge over Burrard Inlet. Vancouver, BC (1999-2001)

CN Rail: Project Manager responsible for planning, establishing design conditions, and design of a new bridge protection pier system for CN's Railway Bridge over the Fraser River at New Westminster. New Westminster, BC (1997-1998)

Harmac Pacific: Project Manager responsible for planning and design of the marine structures for a new chip handling facility for up to 7000 ton barges. Harmac, BC (1998)

White Bear Waters Ltd.: Project Manager responsible for site evaluation, planning, and design of a new bulk water export facility for up to 250,000 DWT tankers. The marine facility includes two deep water terminals each with a loading platform and four breasting/mooring dolphins. The selected terminal site is situated in relatively deep water on a rocky seabed. Princess Royal Island, BC (1994-1995)

Johnston Marine Terminals Ltd.: Evaluation of existing facilities, study, and port master planning for the upgrading and expansion of the existing container and general cargo port facilities at Fraser Surrey Docks. Surrey, BC (1988-1989)

Placer Dome Inc.: Project Engineer responsible for the planning and detailed design of a deep sea supply port for mining operations. The work included design of two protecting breakwaters, shore protection, a deep sea berth, and a barge berth. Misima Mine Development, Papua, New Guinea (1987-1988)

Canadian International Development Agency: Project Engineer responsible for the planning and design of wharf and coastal structures and for the planning and execution of environmental site investigations for the proposed phased development of the port of Saint-Louis, Senegal. The project included the development of master plans, study, and design of an ocean port at Saint-Louis and 10 river ports on the Senegal River. Proposed facilities at Saint-Louis included two breakwaters, a dredged access channel and port basin, multi-purpose berths, a phosphate loading terminal, and a petroleum product terminal. Port of Saint-Louis, Senegal (1982-1985)

Koch: Project Manager responsible for planning, preliminary and detailed design of civil structures for a deep sea coal unloading facility for up to 40,000 DWT bulk carries. The coal terminal site is situated close to existing tanker facilities for crude and refined oil products, a location that required special considerations and close cooperation with the various authorities and users. Sines, Portugal (1985-1986)

Taiwan Power Authority: Project Engineer engaged on site evaluation, conceptual and preliminary design of a new coal unloading facility for 200,000 DWT bulk carriers. The work included design of wharf and breakwater structures, evaluation of environmental conditions and preparation of specifications for hydraulic model testing. Su-Ao, Taiwan (1982-1986)

Ridley Terminals Inc.: Project Engineer responsible for the development and detailed design of berthing and mooring dolphin structures for up to 100,000 DWT bulk carriers. The dolphins consist of anchored steel pipe piles with a reinforced concrete dolphin deck and soft fender panels supported by a cantilever steel frame. Ridley Island, BC (1981-1982)

World Bank/Banjul Port Authority: Project Engineer responsible for the development and design of a new 125 m long pile supported deep sea cargo pier. Banjul Port, Gambia (1980-1981)

Somalia Port Authorities: Project Engineer responsible for the study, design, and preparation of specifications for a new general cargo berth at the deep sea port. Berbera Port, Somalia (1979-1980)

Ferry Terminals

The following are some of the ferry terminal projects Arvid Pedersen has been involved in.

BC Ferry Corporation: Project Manager responsible for the development, detailed design, and construction supervision of new fender systems and berthing dolphins for Berth No. 3 and Berth No. 5 at Tsawwassen Ferry Terminal. Tsawwassen, BC (1992-1996)

BC Ferry Corporation: Project Engineer responsible for the design and construction supervision of a new ferry terminal berth for BC Ferry Corporation's new S-Class ferries. The project included a new double deck ferry ramp, pre-cast concrete caisson dolphins and pile supported wingwall structures. Swartz Bay, BC (1991-1992)

BC Ferry Corporation: Project Engineer responsible for the development, detailed design, and construction supervision of a new automatic multi-apron double ramp for BC Ferry Corporation's new S-Class ferries. Tsawwassen, BC (1990-1991)

BC Ferry Corporation: Project Engineer responsible for the development, detailed design, and construction supervision of the main ramp structure and land abutment for the new lower ramps at Berth 1, 2, and 3 in Horseshoe Bay. The new lower ramps were developed to include a multi-apron arrangement in order to ensure smooth transition from land to ferry deck for larger trucks with low undercarriage. The selected system consists of a two girder steel ramp with a primary and two secondary aprons. Horseshoe Bay, BC (1988-1990)

BC Ferry Corporation: Project Engineer responsible for the development, detailed design, and construction supervision of a suitable scheme for stabilization of the ramp structures and retaining walls at BC Ferry Corporation's terminal in Horseshoe Bay. The work included scour protection of the seabed at the ramp and tower structures, and installation of additional anchoring of the existing steel sheet pile retaining walls. Horseshoe Bay, BC (1985-1986)

Gedser Travemunde Linien Ltd.: Project Engineer engaged on planning, detailed design, and construction supervision of the expansion of Gedser Ferry Terminal to accommodate a new and larger ferry class. The work included development and design of a soft fender system with high energy absorbing capacity, scour protection of the seabed at the wingwalls, and modifications to the ramps and passenger walkway. Gedser Port, Denmark (1980-1981)

Small Craft Harbours & Marinas

The following are some of the small craft harbour and marina projects Arvid Pedersen has been involved in.

Small Craft Harbours Branch: Project Manager responsible for the inspection, study, planning, and development of Harbour Management Documents for the existing small craft harbours at Alert Bay, Cow Bay, Dodge Cove, Fairview Bay, French Creek,

Gibsons, Rushbrook, Saltspring Island, Sointula, Tofino, Tsehum Harbour, Ucluelet, and Winter Harbour, BC (1990-1994)

Reed Point Marina: Planning and detailed design of west marina expansion. Port Moody, BC (1996)

Shelter Island Marina: Planning and detailed design of west dock development. Richmond, BC (1995-1996)

Reed Point Marina: Review and planning of modifications to the general arrangement of existing marina. Port Moody, BC (1994)

Eagle Harbour Yacht Club: Planning, detailed design, and construction supervision of new breakwater protection. West Vancouver, BC (1991)

Seycove Marina Ltd.: Review and planning of modifications to the general arrangement of existing marina. Deep Cove, BC (1991)

Public Works Canada: Project Manager responsible for the inspection, planning, and detailed design of the expansion and upgrading of the existing fishing harbour at Deep Bay. Prime features of the work included dredging and expansion of the pier head to provide three loading berths, relocation of the mooring floats to ensure navigable access to the berths and foreshore development and slope protection. Deep Bay Fishing Harbour, BC (1987-1990).

Inspection & Evaluation

The following are some of the inspection and evaluation of small craft harbours Arvid Pedersen has been involved in.

Small Craft Harbours Branch: Inspection, evaluation, and preparation of Marine Engineering Inspection Reports for the following SCH harbour facilities: Albion, Alert Bay, Bella Bella, Bella Coola, Burgoyne Bay, Cow Bay, Crofton, Degnen Bay, Dodge Cove, Egmont, Fairview Bay, Ford Cove, Gibsons, Horton Bay, Hospital Bay, Kelsey Bay, Lyall Harbour, Madeira Park, Mount Gardner Park, Ocean Falls, Porpoise Bay, Powell River, Quathiaski Cove, Rushbrook, Secret Cove, Shoal Bay, Sointula, West Bay, Winter Harbour, and Zeballos, BC (1993 - present)

District of Sechelt: Inspection and structural assessment of timber wharf and access trestle in Davis Bay. Sechelt, BC (1996)

City of Surrey: Inspection and structural assessment of small craft harbour facility at Crescent Beach. Surrey, BC (1995)

West Vancouver Yacht Club: Inspection and evaluation of existing marina. West Vancouver, BC (1993)

CN Rail: Inspection and structural assessment of protecting pier structures for the CN rail bridge over Fraser River. New Westminster, BC (1996)

Shelter Island Marina: Inspection of damaged travelift pier and detailed design of pier repair. Richmond, BC (1995)

Celtic Shipyards Ltd.: Inspection of damaged travelift pier and supervision of repair work. Vancouver, BC (1995)

Newstech Recycling Ltd.: Inspection and structural assessment of existing timber wharf at Newstech Recycling's facilities. Coquitlam, BC (1996)

District of Pitt Meadows: Inspection and structural assessment of existing timber bridge over Katzie Slough, Sturgeon Slough and at Harris Road. Pitt Meadows, BC (1994-1996)

Coastal Engineering

The following are some of the coastal engineering studies Arvid Pedersen has been involved in.

Public Works Canada: Project Manager responsible for the evaluation and numerical model investigation of the wave climate in the Strait of Georgia and along the North Arm Jetty. Repair schemes for the various sections along the jetty were determined and the effect of the work on river sedimentation was analyzed. Fraser River North Arm Jetty, BC (1991)

Public Works Canada: Project Manager responsible for the evaluation and numerical model investigation of the wave climate in Howe Sound and the level of wave disturbance in Snug Cove for a number of alternative floating breakwater protection schemes. Bowen Island BC (1989)

Fraser River Pile & Dredge: Project Engineer responsible for the development and detailed design of shore protection for Howe Sound Pulp and Paper's new two berth wood chip barge facility at the Port Mellon plant. Port Mellon, BC (1989-1990)

Sandwell - Swan Wooster Inc./Ministry of Natural Resources, Ontario: Senior Engineer and Adviser for the numerical wave hindcast study for Lake Erie and Lake St. Clair. This project formed a part of a major study of environmental design criteria for the Great Lakes. Lake Erie Wave Study, Ontario (1987-1988)

Public Works Canada: Project Engineer responsible for study and evaluation of environmental design conditions (waves, current, wind) for the proposed bridge crossing between N.B. and PEI. Northumberland Strait, New Brunswick/Prince Edward Island (1987)

Crescent City Harbour District: Project Engineer responsible for the wave analysis and detailed design of a groin system to protect the eroding beach south of Crescent City, California. Crescent City, California, USA (1986-1987)

Vancouver Port Corporation: Project Engineer responsible for the evaluation of the level of potential operational downtime for container loading operations due to wind and wave disturbance at a proposed new container terminal on pod 4 at Roberts Bank. Roberts Bank, BC (1985)

Public Works Canada: Project Engineer responsible for the study and review of the wave climate, the detailed design and the stability of the completed rubble mound breakwater for Neil's Harbour. Neil's Harbour, Nova Scotia, Canada (1986)

Mobile Research and Development Corporation: Study and design of retained fill island, scour and slope protection for oil and gas development. Responsible for coastal engineering aspects. Beaufort Sea, U.S.A (1983)

Dome Petroleum Ltd., Esso Resources Canada Ltd., Gulf Canada Resources Inc.: Environmental impact study and study of various types of artificial island structures for oil and gas development. Responsible for coastal engineering aspects. Beaufort Sea, Canada (1981-1982)

Ministry of Highways: Project Engineer responsible for the detailed design and construction supervision of groins and revetments for coastal protection. Faxe Port, Denmark (1979-1980)

Algeria Port Authority: Project Engineer engaged in the site inspection and detailed design of immediate repair schemes for the damaged 2 km long main breakwater at d'Arzew El Djedid, Algeria. The breakwater is situated on 25 m of water depth and has a primary armour layer of 48 tons tetrapods. d'Arzew El Djedid, Algeria (1980)

Port de Quadeema: Project Engineer engaged in the reconnaissance and site selection for a new 8 berth container and general cargo port. Detailed coastal and bathymetric investigation of the selected location. Port de Quadeema, Saudi Arabia (1976)

Bintulu Port: Research Engineer responsible for the wave analysis and study and design of the rubble mound main breakwater at Bintulu. Bintulu Port, Malaysia (1976-1977)

Christiani and Nielsen Ltd.: Research Engineer responsible for the wave analysis and study and design of repair schemes for the damaged rubble mound main breakwater at Maceio. Maceio, Brazil (1976-1977)

Iceland Port Authority: Research Engineer responsible for the wave analysis and study and design of a dolos armoured rubble mound breakwater at Thorlakshofden. Thorlakshofden, Iceland (1973-1974)