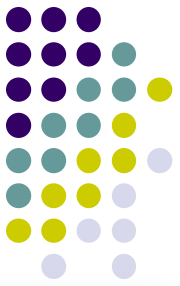
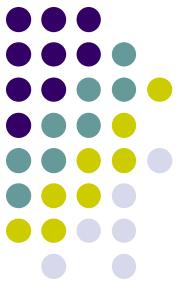


Completion Report

Nanaimo Port Authority

Cruise Pier & Welcome Centre

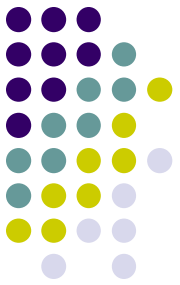




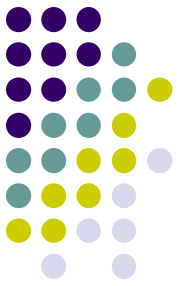
Cruise Pier & Welcome Centre Completion Report



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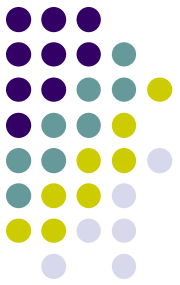
● Project Objectives	Slide 4
● Background & Methodology	Slide 5–7
● Stages of Development & Timeline	Slide 8 - 9
● Preliminary Work – Study	Slide 10 - 13
● Acquire Investment Funds & Support – 2007 to 2010	Slide 14 - 15
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● Preliminary Construction – July 2010	Slide 45 - 87
● Intermediate Construction – Nov 2010	Slide 88-158
● Final Stages Construction – March 2011	Slide 159- 207
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● Arrival of First Cruise Ship – May 2014	Slide 213 - 226
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● Project Scope & Time Line	Slide 229 - 230
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Project Objectives

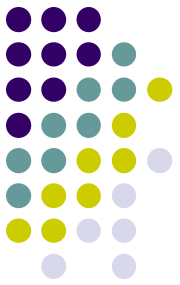
- Establish a Permanent Cruise Facility serving the Mid-island Region
- Expand Economic Diversity and Tourism
- Provide Customs Clearance Capabilities for Cruise Ships & Passengers
- Facilitate a Community-led Effort to Support the Establishment of the Facility and Industry
- Create Employment During Construction and Continued Operation

Background



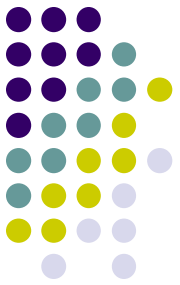
- The Nanaimo Port Authority commenced construction on the Nanaimo Cruise Ship Facility in June 2010 and successfully completed the project in May 2011, in time for the first cruise ship arrival of the year.
- The project was a combined effort by all parties from the very beginning stages of concept drawings through funding to construction and the grand opening. Without the funding from **Island Coastal Economic Trust** this project could not be realized. We sincerely thank you for your support and contribution.
- The Nanaimo Port Authority Cruise Ship Facility Project was initiated to promote tourism and expand economic diversity within the central island region. The facility provides a new access for tourism to the region through the docking of cruise vessels.
- With the commitment from our funding partners; The Infrastructure Stimulus Fund, the Province of British Columbia and the Island Coastal Economic Trust, the Nanaimo Port Authority construction commenced in June 2010 after six years of planning.

Background Continued



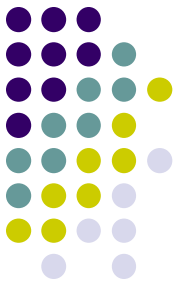
- The construction work involved local companies, Vancouver Pile Driving Co. Ltd., HeatherBrae Builders Ltd. and Windley Contracting Ltd. plus numerous sub-trades over a ten month construction period.
- The construction process provided many challenges and unique opportunities for all pontoon installation. The “Hanging” second floor of the building involved parties from the “spin fin” pile design to the floating concrete mooring.
- The Nanaimo Port Authority sincerely thanks all its funding and construction partners for completion of a project that provided local employment during the construction phase thus allowing businesses to retain employees during an economic downturn.
- The project commenced in June 2010 with the placement of initial false work pilings that established the line and layout for the pier facility and temporary support for the permanent structure until all components were in place for it to be self supporting.

Background Continued



- The permanent pilings were manufactured in North Vancouver and barged to Nanaimo for installation. The angled pilings which form the main supporting structure for the floating pier structure utilized a proprietary technology with a “spin fin ®” design. The design allows for a lesser amount of piling to be installed due to their ability to allow substantial overload deformation.
- The “Spin Fin®” is a pipe pile and equipped with engineered angled plate fins at the end of the pile.
- The first part of the project, further to the environmental review, involved dredging approximately 12,800 cubic metres of material to allow proper maneuvering into and out of the marine facility. The amount of dredge material and environmental impact was significantly reduced due to dock realignment and extensive consultation with local pilots, ship captains and the cruise ship lines.
- The concrete docking pier was manufactured in North Vancouver in two sections, each 350 feet in length, and floated to Nanaimo in February 2011. The docking pier plus the floating pontoon can facilitate a ship to the maximum length of 315 metres.

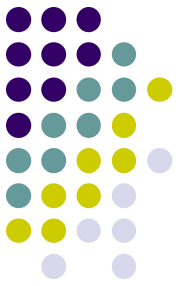
Stages of Development



- Preliminary Work –
 - Feasibility Study-1997 to 2009 Slide 4 -13
- Acquire Investment Funds – 2007 to 2010 Slide 14-15
- Design Phase – 2009 to 2010 Slide 16 - 22
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- Arrival of First Cruise Ship – May 7, 2011 Slide 213 -226

Nanaimo Assembly Wharf

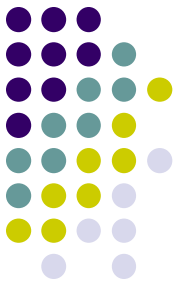
Future site for a cruise dock



Nanaimo Assembly Wharf - Background



- **NAW build in 1950's**
- ***37 acres of paved storage***
- ***3 commercial berths handling Panamax size vessels***
- ***3 storage warehouses with 90, 000 square feet space***
- ***Coastwise barge ramp***
- ***Site of the Port's new Cruise Terminal***

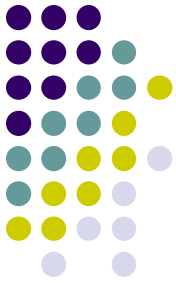


Prime Minister states:

“A Partnership between Canada’s Economic Action Plan, Provincial Partners and the Nanaimo Port Authority”

Prime Minister Stephen Harper

Prime Minister Harper's Letter of Support



© 2011 Her Majesty the Queen in Right of Canada

June 6, 2011

Mr. Bernie A. Dumas
President and CEO
Nanaimo Port Authority
104 Front Street
Nanaimo, BC V9R 5K4

Dear Mr. Dumas:

Thank you for your e-mail of May 11, which was brought to my attention by Nigel Hannaford.

I am very pleased that the Nanaimo cruise ship terminal was completed on schedule. You must be extremely proud of the tremendous energy and enthusiasm this project has generated. I know this undertaking has been of great value to the local economy, and I share your belief that a permanent dock will entice cruise ship carriers to visit your beautiful region.

I was very pleased to be on hand to personally announce our Government's support of the terminal through Canada's Economic Action Plan. I look forward to the positive results of our collective efforts with great anticipation.

Once again, thank you for taking the time to write.

Sincerely,

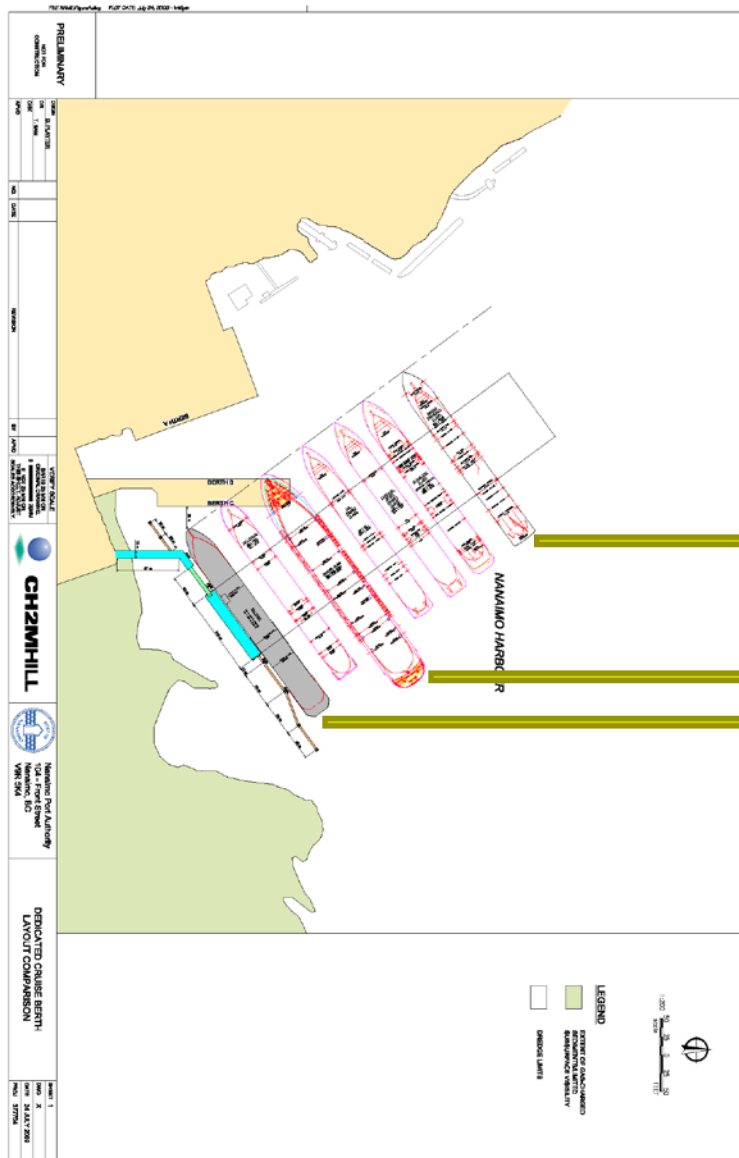
The Rt. Hon. Stephen Harper, P.C., M.P.
Prime Minister of Canada

/sew



Cruise Ship Fleet

The berth has been designed to handle the largest cruise ships operating. The Genesis and Solstice class vessels are unable to operate on the West Coast due to their size, but will enter the trade once the Panama Canal upgrades are completed in 2014. These vessels are unable to sail under the Lion's Gate Bridge at high tide and the power lines in Seymour Narrows would also create challenges.

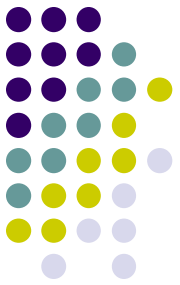


Princess Class 295 meters
(size currently calling)

Genesis Class 360 meters (Panama Canal 2014)

Solstice class 315 metres (2014)

Floating Cruise Dock Concept



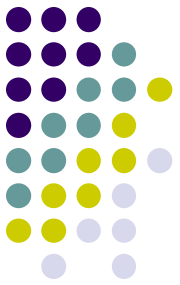
A series of transfer bridges and gangways are attached to the Assembly Wharf

The concrete pontoon is the largest single piece at 110 metres

Total berth length = 396 meters (1300 feet)

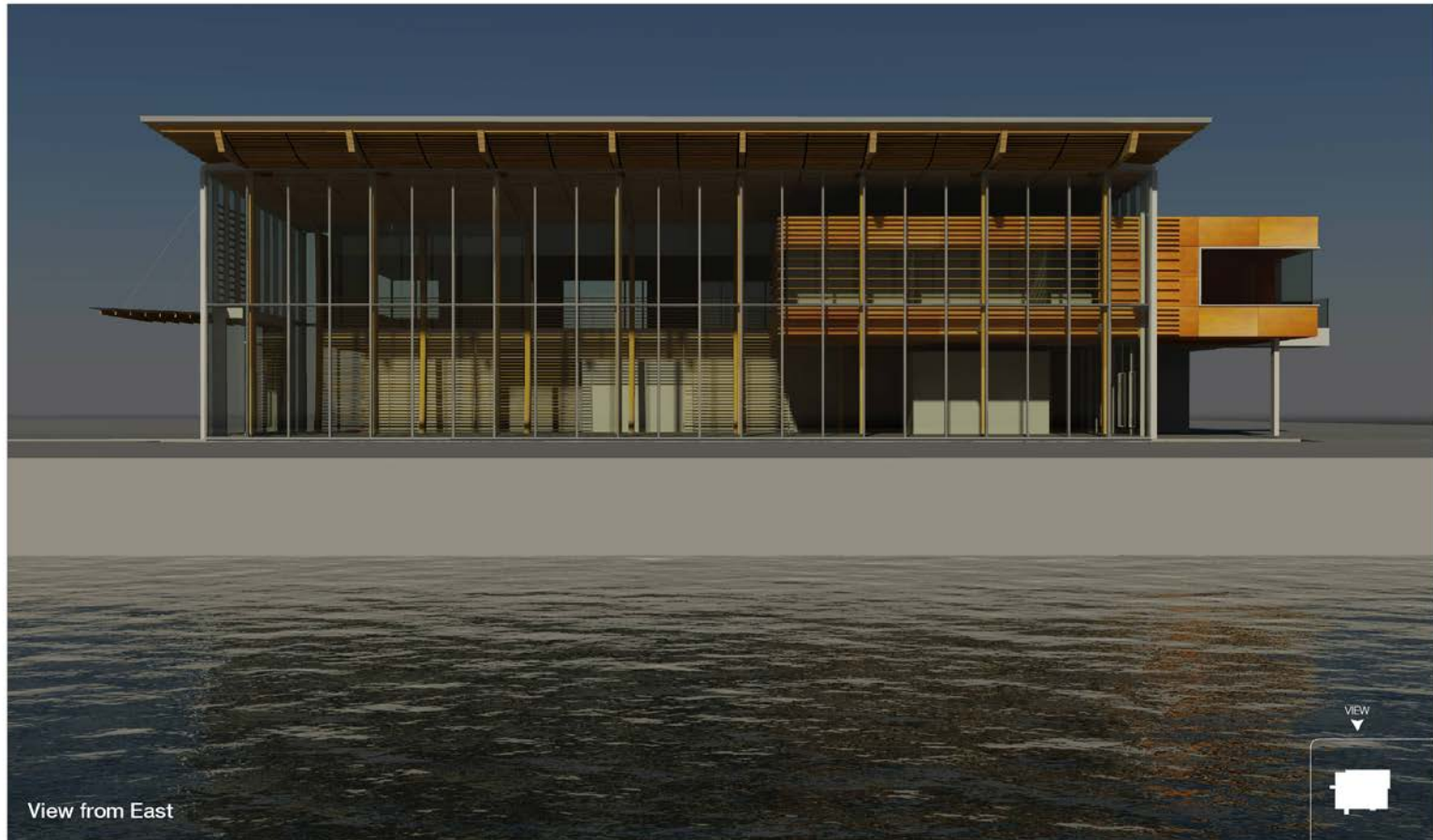
Floating docks are widely used in Alaska and favoured by the cruise industry

The floating dock design and location was run on a computerized simulation system at the Star Center, and was approved by both the shore Captains and BC Coast Pilots



Welcome Centre

Welcome Centre – CBSA inspection and office space
13,289 square feet- 7,212 square feet main floor / 6,072 square feet top floor



David Poiron Architect Inc
9-93 Commercial Street, Nanaimo, BC V9R 5G3
250.714.1963 phone
www.poiron.com



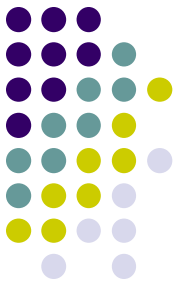
ben checkwith design
25 - 98 Manson Rd.
Salt Spring Island, BC V8K 2W4
(250) 538-7686
www.checkwith.com

Port of Nanaimo
Cruise Ship Terminal Building



Economic Effect

More than a Cruise Facility



- **“Biggest success of this Project will be measured in the Future”**

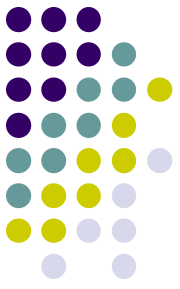
Bob Bennie – Chair – Nanaimo Port Authority

“Will force change, create new development and more jobs” Heatherbrae – Project lead

“First Step in the development of a new Transportation hub for the central Island”

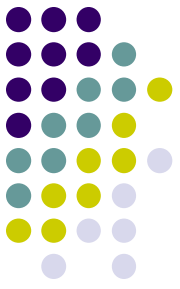
Bernie Dumas – President & CEO – Nanaimo Port Authority

Several firms engaged in project



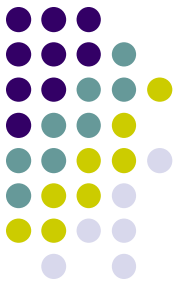
- At a critical time for a local workforce
- Nanaimo Region & Upper Island
- Work shared with Snuneymuxw Community
- Local workers could work locally rather than work in Whitehorse, Alberta or Saskatchewan

Project stimulated work for



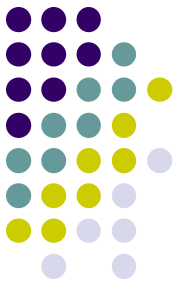
- 47 to 65 workers on site per day –from Video
- “4 crews of 22 to 30 people”
- “13 to 22 crew members today”
- “15 to 20 crew here today”
- 170,000 man hours or 86 Man Years
- Nanaimo Region & Upper Island

Project stimulated work for:

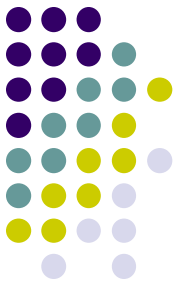


Over 80
Local & Mid-Island
Companies

Requirements for the Report



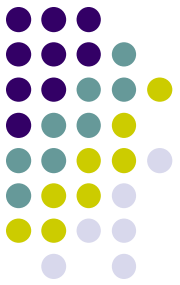
- # of people employed – man-month hours during project
- 10 month project – some crew worked over night shifts to meet March 31, 2011 deadline
- Several firms engaged in project
- Biggest project in years for the mid-island
- Produced Pride for Nanaimo & the Mid Island



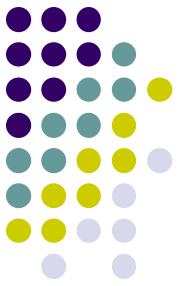
Requirements for the Report

- PERMANENT NEW JOBS
 - Security – additional 5 commissionaires per visit
 - Harbour Patrol – 2 new FTE's & 2 Casual
 - Tour Companies – 3 with Driver plus Tour Guide
 - 6 Regional District Shuttles
 - Pacific Coast Pilots
 - Downtown Association
 - Snuneymuxw Community
 - Community Relations – Nanaimo Port Authority
 - Additional Maintenance

Economic Impact BC Cruise Industry in 2011



- BC cruise ports Nanaimo, Prince Rupert, Vancouver, Victoria
- an 8% increase in total passengers visiting Nanaimo, Port Alberni, Prince Rupert, Vancouver and Victoria in 2011
- welcomed 1.2 million cruise passengers
- Total 435 calls in 2011, generating a total economic impact of \$1.3 billion to the BC economy.
- Direct passenger and crew spending totalled \$185 million and cruise line spending was \$367 million.
- Overall business & tax contributions to the province were \$50 million.
- **Source** — Cruise BC - http://www.cruisebc.ca/assets/uploads/258_cruisebc_fall2011_web_859.pdf



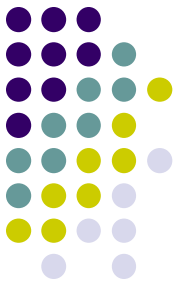
Economic Impact - 2011

BC Cruise Industry

- Of the \$765 million spent by the cruise industry in B.C. last year, \$381 million was spent by cruise lines while passengers spent \$362 million and crew members spent \$22 million.
- The report said direct cruise industry spending in B.C. supports more than 6,900 jobs and \$233 million in wages and salaries.
- Cruises that originate or terminate in Vancouver generate \$237 per passenger in spending and \$55 per crew member in spending for each port call.
- **Source** — Vancouver Sun > http://www.canada.com/story_print.html?id=d6624677-2448-49c2-b63e-da13570a27e7&sponsor=

Economic Impact - 2011

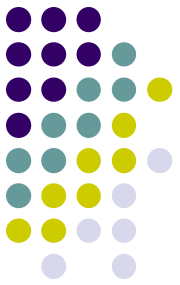
Cruise Industry Nanaimo & Port Alberni



- Total 4 calls in Nanaimo for 2011 -
 - ***Norwegian Pearl – May 7, 2011***
 - ***Celebrity Century – May 20, 2011***
 - ***Celebrity Millennium – September 10, 2011***
 - ***Norwegian Star – September 25, 2011***
- Welcomed 10,000 cruise passengers and 250 crew visiting Nanaimo and Port Alberni, Duncan and Chemainus in 2011
- Generating a total economic impact of \$ 2.36 million for the mid-island economy.
- Direct and Indirect Revenues is \$45,000. per visit = \$180,000. in 2011
- Source –NPA - <http://www.npa.ca/images/stories/PDF/Port50thLR.pdf>

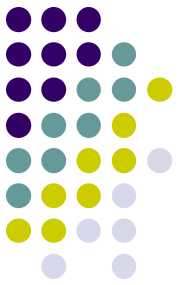
Economic Impact - 2012

Cruise Industry Nanaimo & Port Alberni



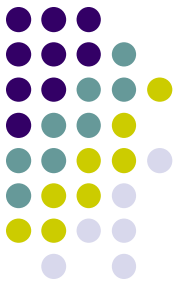
- Total 7 calls in Nanaimo for 2012
 - *Sea Lion*– May 2, 2012
 - *Sun Bird*– May 3, 2012
 - *Norwegian Pearl* – May 5, 2012
 - *The World* – July 1, 2012
 - *Celebrity Millennium* – September 5, 2012
 - *Celebrity Century* – September 26, 2012
 - *Sapphire Princess*– September 30, 2012
- Welcomed 9,222 cruise passengers and 4,176 crew to Nanaimo with shore excursions to Port Alberni, Duncan and Chemainus
- Generating a total economic impact of \$ 2.36 million to the mid island economy.
- Direct and Indirect Revenues is \$45,000. per visit = \$225,000. in 2012

A Few Perceptions from key Stakeholders



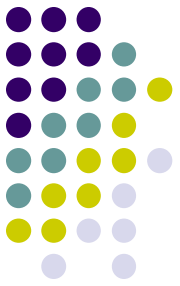
- **2011 Review from ship Captains and passengers - terminal is “a mariners dream” with docking procedures complete in less than 30 minutes**
- **“Well received at 2012 SeaTrade Cruise in Florida”**
 - Doug Peterson – Marketing Manager – Nanaimo Port Authority
- **The Project met its original goal - On Time meeting Transport Canada Security Requirements**

Economic Build 2011 to 2018



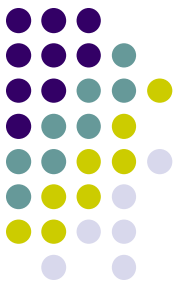
- 2011 – 4 ships @ \$600,000 = \$2.36 million
- 2012 – 5 Ships = \$ 3,000,000.
- 2013 – 7 ships = \$ 4,200,000.
- 2014 – 12 ships = \$ 7,200,000.
- 2015 – 15 ships = \$ 9,000,000.
- 2016 – 18 ships = \$10,800,000.
- 2017 – 21 ships = \$12,600,000.
- 2018 – 24 ships = \$14,400,000.
- TOTAL \$63,560,000.**

Requirements for the Report



- The following photos progress through the construction of the Cruise Pier and Welcome Centre including:
 - Preliminary Stage Slides 46 - 87
 - Intermediate Stages Slides 89-158
 - Final Stages Slides 159 -206

Grand Opening – Ribbon Cutting

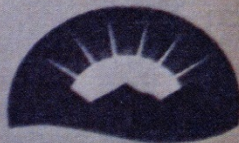


Grand Opening



The Nanaimo Assembly Wharves - Floating Cruise Ship Terminal was constructed through funding contributions from the Government of Canada, the Province of British Columbia, the Nanaimo Port Authority and the Island Coastal Economic Trust.

Quais généraux de Nanaimo - Le terminal flottant pour navires de croisière a été construit grâce à des contributions du gouvernement du Canada, de la province de la Colombie-Britannique, de l'Administration portuaire de Nanaimo et de l'Île côtier fidéicommiss économique.

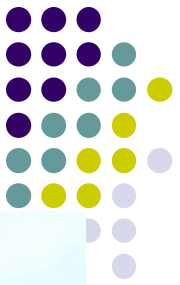


BRITISH
COLUMBIA

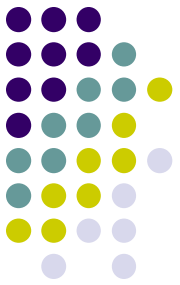
The Best Place on Earth

Canada

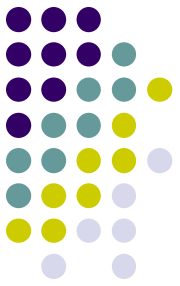
Norwegian Pearl Arrives – May 7, 2011



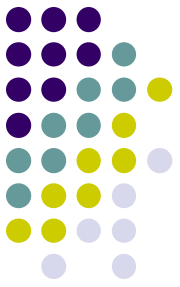
Norwegian Pearl Arrives – May 7, 2011



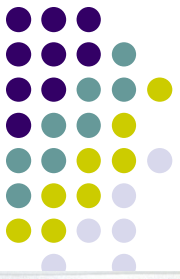
Norwegian Pearl Arrives – May 7, 2011



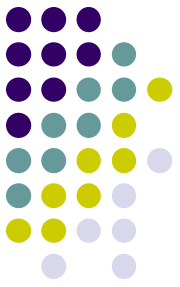
Passengers Disembarking



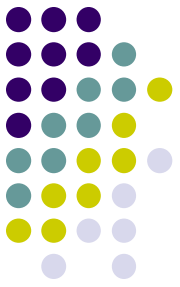
Passengers Disembarking



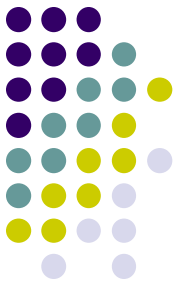
Passengers Disembarking and Returning to Ship



Passengers Exit Customs Screening and proceed to Welcome Centre



Passengers with Tourism Nanaimo

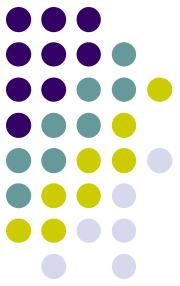


Passengers loading onto Mid-Island Shore Excursions



Use of Facility by Canadian Navy



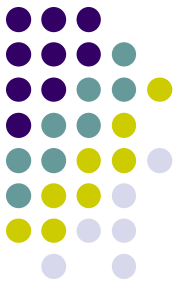


Other Potential Uses

- Canadian Navy – Marine Festival
- Foot Passenger Ferry Terminal
- Special Events
 - Conference Receptions
 - Island & Local Association Gatherings

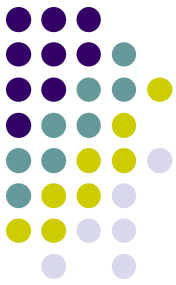
Requirements for the Report

All Project Objects Achieved On Time & On Budget



- ☑ Establish a Permanent Cruise Facility serving the Mid-island Region
- ☑ Expand Economic Diversity and Tourism
- ☑ Provide Customs Clearance Capabilities for Cruise Ships & Passengers
- ☑ Facilitate a Community-led Effort to Support the Establishment of the Facility and Industry
- ☑ Create Employment During Construction and Continued Operation

Budget



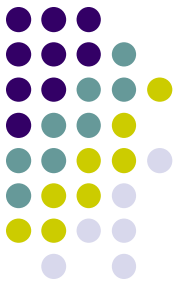
Nanaimo Assembly Wharf - Port Cruise Ship Facility Financial Statement for the Period ending June 30, 2011

Project Expenditures

Environmental		\$291,980
Dredging		174,448
Engineering		3,324,218
Construction - Pier		13,980,189
Construction - Building		4,478,128
Infrastructure		<u>1,814,521</u>
TOTAL EXPENDITURES		<u>\$24,036,484</u>

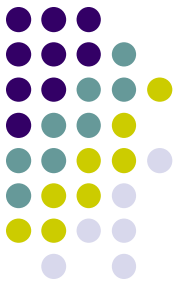
Funding Sources

Federal infrastructure Fund		\$8,500,000
Province of British Columbia		5,000,000
Island Coastal Economic Trust		3,500,000
Nanaimo Port Authority		<u>8,163,484</u>
TOTAL FUNDING SOURCES		<u>\$24,063,484</u>



Value

- Cruise terminal received awards & International recognition for design and functionality
- Featured in several supplier trade publications
- Community Groups requesting use of cruise terminal in off season as venue to host trade and conference receptions



Value to the Island Region

- Introduces the mid-island region to a new market of international cruise travellers.
- Cruise Terminal solidifies mid-island region as a sophisticated cruise destination with international cruise lines.
- Provides flexibility for Cruise companies who develop new options for cruise itineraries and shore excursions.

Features of Cruise Terminal



NANAIMO CRUISE TERMINAL

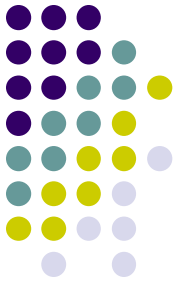
The Nanaimo Cruise Terminal was built with the cooperative funding of the BC Provincial Government, Island Coastal Economic Trust, the Federal Government of Canada and the Nanaimo Port Authority. The marine and shore side infrastructure was completed in the record time of ten months, and the first vessel called at the facility on May 7, 2011. The project created approximately 170,000 man hours of employment, or in excess of 90 man years of employment. Where possible, Nanaimo based consultants and contractors were utilized and Snuneymuxw First Nation people worked with the various sub-trades and contractors.

Welcome Centre Features

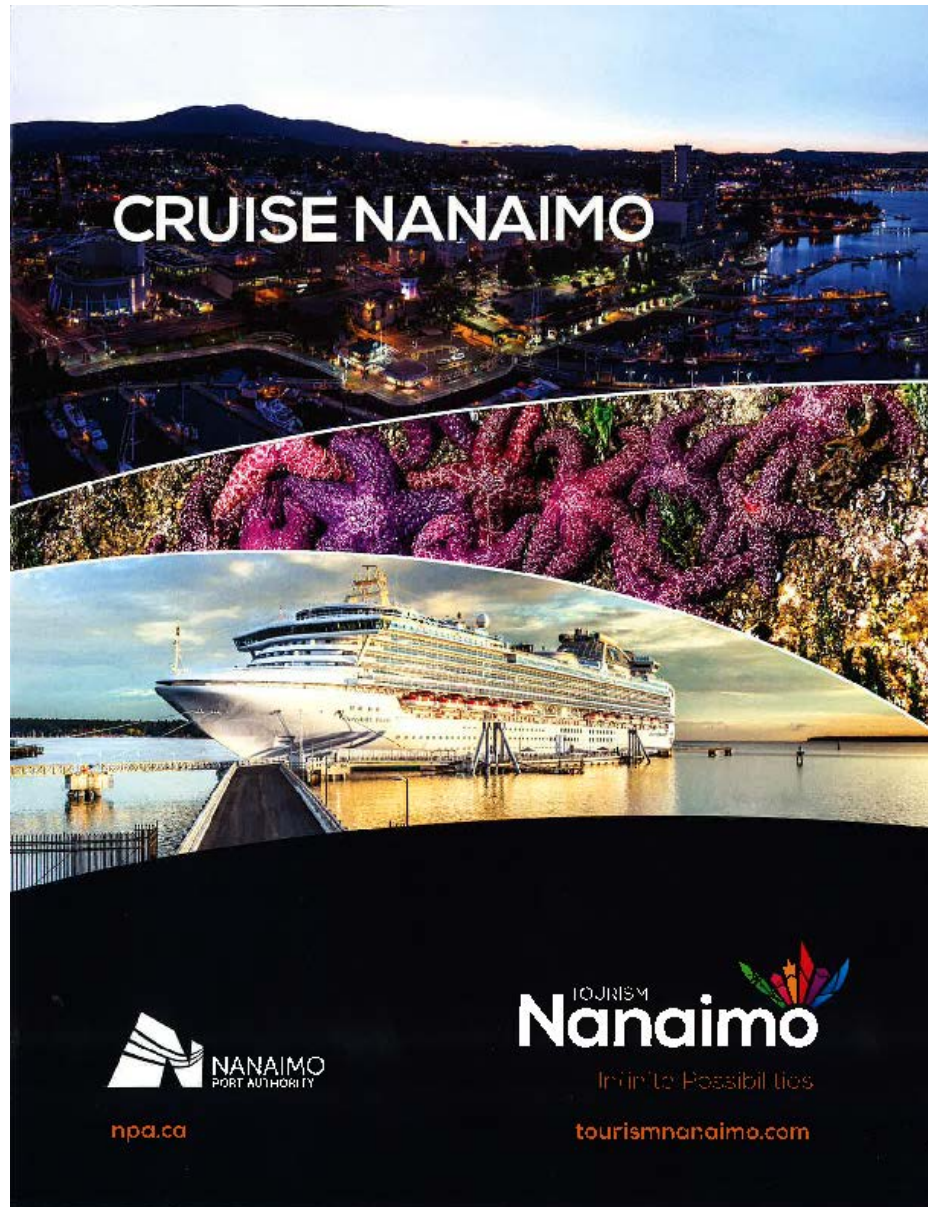
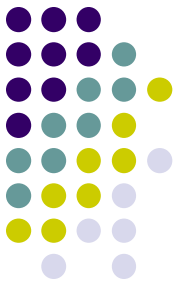
- A footprint of approximately 7,300 square feet, incorporating Canada Border Services Agency inspection facilities, a welcoming area, commercial kitchen and washroom facilities
- Ground stabilization for the building required over 800 truckloads of crushed gravel to be inserted at depths of 30 metres onto the bedrock
- The terminal has a state of the art security system built to Transport Canada MTSR R2 standards
- The building was designed to create a unique West Coast feel which incorporated wood glulam beams with wooden slats along the ceiling and inner beams to honour the historical significance of wood production in Nanaimo
- The floor-to-ceiling windows enable visitors to view the ever changing inner harbour

Cruise Berth Features

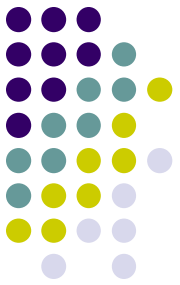
- Location 49° 09.8' N latitude 123° 55.3' W longitude
- The float consists of two concrete pontoons joined together to create a structure that is 350 feet long, 50 feet wide and 20 feet deep (107m x 15m x 6m)
- The pontoons are joined together by an intricate cable system
- The pontoons contain 320 metric tonnes of rebar and the equivalent of 130 truckloads of concrete
- 48 inch piles driven to maximum depth of 55 metres/180 feet to support the float
- Approximately 13,000 cubic metres were dredged for the approach to the berth
- Height of float above water - 2.44 metres/8 feet
- Strength of tie-up bollards - 50 to 125 tonnes
- Depth of water at low tide - 12 metres/39 feet
- Tide range - 5 metres/16 feet
- Maximum ship length - 320 metres/1,050 feet
- All facilities are handicap accessible



Features of Cruise Terminal – Used by NEDC



Features of Cruise Terminal – Used by NEDC



Nanaimo INFORMATION

GENERAL

Population: 86,000

Language: English

Currency: Can\$ (March 2, 2013 US \$1 = Can \$0.99)

Other accepted currencies: US\$

Automatic teller machines (ATMs) are available throughout downtown area

Money exchange is available at all banks

Telephones for international credit card calls are available at the tender pier

Tourist information is available at the Welcome Centre

Number of available taxis: 25; limo service also available

Taxis queue adjacent to the Welcome Centre

Motor coaches are staged adjacent to the Welcome Centre

SHUTTLE SERVICE

Distance / duration between cruise berth and 'downtown': 1.2km (0.7mi / 10 min)

Shuttle service is free with interpretive guides on board

Departures of shuttle service: every 6 - 10min

Capacity of each shuttle bus: 52 passengers

'Downtown' shuttle service location: in front of the Welcome Centre

TOURIST OFFICE

Video available: Yes

Literature available for passengers: Yes

Tourism counselling will be available in the Welcome Centre

SHOPPING

Shops are closed on: Christmas Day, New Year's Day

Shops are open: 7 days per week from 10am (1000) until 5:30pm (1730)

Arts and crafts market is open on: Fridays from 9am (0900) until 2pm (1400) and all cruise visit days

A First Nations arts and crafts shop is located in the downtown area

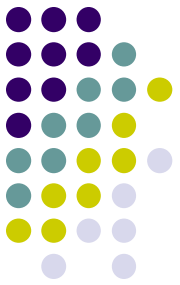
CRUISE SHIP VISITS

Ships that have visited include;

Spirit of Columbia, Spirit of Endeavor, Serenade of the Seas, Radiance of the Seas, Infinity, Mercury, Island Spirit, Yorktown Clipper, Fairsea, Sapphire Princess, Golden Princess, Norwegian Pearl, Celebrity Millennium, Celebrity Century, Norwegian Pearl, Norwegian Sun



Features of Cruise Terminal – Used by NEDC



SHORE EXCURSIONS

Desired length of ship's call to maximum shore excursions:

Minimum: 6hrs

Preferred: 10hrs

Preferred time: from 7am (0700) until 5pm (1700)

Major sights / shore excursions destinations:

- Nanaimo Bar (Dessert) Trail
- Cedar Yellow Point Artisans Trail
- Gabriola Island
- Cathedral Grove
- Chemainus Murals
- Alberni Steam Train and McLean Mill Historical Site
- Coombs Market
- Cowichan Wine Country
- Historic Walking and Coal Mining Tours

Average shore excursion durations: 2-5hrs

Motor coaches / vans:

- Make / type of equipment: Prevost and MCI; also van / minibus
- Capacity: from 15 to 56 passengers
- Air-conditioned: yes
- Public address system: yes
- Availability: 20 coaches (1000 seats)

Tour guides:

- Availability of tour guides in English: ample
- Tour guides are trained / certified by provincial or regional organizations

NANAIMO MUSEUM

Museums are open 7 days per week from 10am (1000) - 5pm (1700)

HOLIDAYS

Victoria Day - 3rd Monday in May

Canada Day - July 1st

BC Day - 1st Monday in August

Labour Day - 1st Monday in September

PORT RESTRICTIONS

- Use of ship's thrusters is allowed at arrival / departure
- Painting of ship's hull is allowed from pier / paint raft
- Window washing is allowed with environmentally friendly soap
- Discharging gray (sink) water or black (sewage) is not allowed
- No other special information or restrictions
- No use of on-board incinerator



tourismnanaimo.com

Features of Cruise Terminal – Used by NEDC



Nanaimo FACILITIES – DOCKING

BERTH LOCATION

Latitude 49°09'8" North;
Longitude 123°55'3" West

FLOAT DIMENSIONS

107m x 15m (350ft x 50ft)

HEIGHT OF FLOAT ABOVE WATER

2.44m (8ft)

TYPE OF FENDERS

Yokohama type 2.4m x 4.2m (8ft x 13.75ft)
spaced 15m (50ft) apart

STRENGTH OF BOLLARDS

50 and 100 tonnes on float; 100 and 125 tonnes
on mooring and berthing dolphins

DISTANCE BETWEEN BOLLARDS

15m to 24m (50ft and 80ft) on float 30.5m to 40m
(100ft to 130 ft) on mooring
and berthing dolphins

DOLPHINS

3 berthing dolphins and float face; 4 mooring dolphins

SECURITY ZONE AROUND THE VESSEL AT THE PIER

As per MTSR R1 requirement

DEPTH OF WATER ALONGSIDE AT LOW TIDE

Minimum 12m (39ft)

MAXIMUM ALLOWED SHIP'S LENGTH OVERALL

320m (1,050ft)

HANDICAP ACCESSIBILITY

Yes, with transporter service available

AVAILABILITY OF SHORE GANGWAYS

Yes (2)

AVAILABILITY OF FORK LIFTS

Yes

DISTANCE TO WELCOME CENTRE

220m (700ft)

DISTANCE FROM PIER TO 'DOWNTOWN'

Approximately 1km (0.6mi) walking distance

After confirmation, cruise ships will
have guaranteed berthing

Nanaimo PORT SERVICES

PILOTAGE

Pilotage is compulsory

Location of pilot station: Dependent on whether
the vessel is traveling from the South or North;
from the South the pilot may be picked up at
either Seattle or Brattle; from the North at either
Pine Island or Triple Island

Distance to pier / anchorage:

From Pine Island 199n.m.

From Limekiln 70n.m.

Duration of whole maneuver:

From Limekiln: approximately 3.7hrs

From Pine Island: approximately 10.5hrs based

on slack tides in Seymour Narrows; there are

four tide change opportunities per day

Service hours: 24hrs

Number of available pilots: 100

TOWAGE

Tug service is not compulsory; however,

tug assist is at the pilot discretion

FRESH WATER

Available in 2014

GARBAGE

By arrangement

RECYCLING

Recycling service is limited

SLUDGE / OILY BILGE DISCHARGE

By special arrangement

GRAY (SINK) AND BLACK (SEWAGE)

WATER DISCHARGE

By special arrangement

BUNKERS

Bunker service is available

Grade: All grades (180 or 380 or blend)

Delivery: By barge from Vancouver; 200-300 tons / hr
capacity 4,000 MT; Marine diesel oil is available by barge

MAINTENANCE AND REPAIR

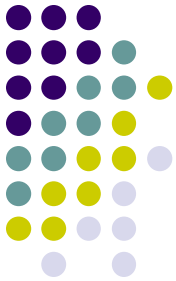
Maintenance / repair facilities; local engineering,
fabrication and electrical shops are available locally

TOURISM Nanaimo | tourismnanaimo.com

Nanaimo PORT AUTHORITY | npa.ca



Facility featured in "Award Magazine"



Nanaimo Cruise Ship Facility

by Laurie Jones

After navigating a sea of red tape, the Nanaimo Port Authority was pleased to see the long-awaited cruise ship and passenger terminal open with the arrival of the Norwegian Pearl, a 2,394-passenger ship in early May.

"The Port has been receiving cruise vessels in Nanaimo's Inner Harbour since 2002 and we have had as many as 15 in one season," says Hervie Dumas, president & CEO, Nanaimo Port Authority (NPA). "In 2005, the board of directors and the management of the Nanaimo Port Authority began to look at a better option to discharge passengers from the ships on a permanent dock, rather than shuttle them ashore by boat." In 2006, the NPA engaged CH2M HILL Canada Limited, a Vancouver engineering firm that specializes in cruise ship terminals, and a number of options were considered.

"The current 35-acre assembly wharf had been used for decades by the forestry industry," says Dumas. "The initial concept by CH2M HILL Canada Limited was to use the original berths, but environmental and geotechnical analyses revealed the need for almost 100,000 cubic metres of dredging. The environmental impact would be severe, so alternative arrangements were pursued."

Interest in creating a workable solution remained strong, and things changed when funding began to come through. "In 2008, the Port Authority received \$5 million from the Province of B.C., and the Island Coastal Economic Trust (ICET) provided an addition of \$3.5 million," says Dumas. "The Federal Government contributed \$3.5 million through the Infrastructure Stimulus Fund and the NPA added \$5 million from its reserves for a budget of \$22 million."

Construction began in August 2010 on a floating dock designed by North Vancouver's Wuxley Parsons, based on specifications by PND Engineers, a Seattle-based company with experience in building Alaskan cruise ship docks. Built in North Vancouver, the main component of the floating dock is a pontoon that is 350 feet long, 50 feet wide and 20 feet deep. "The pontoon is moored to a number of pilings, and is where the passengers will embark and disembark," says Thomas Hoffschild, project manager with CH2M HILL Canada Limited. "The dock consists of 320 metric tons of rebar and has the equivalent of 130 large truckloads of concrete. It was built in North Vancouver by Vancouver Pile Driving Ltd., a contractor for the marine works side."

Construction of the terminal building was finished in record time - from May 2010 to May 2011. Several unique building procedures were implemented in the land works side where the Welcome Centre and second-floor administration offices of the Nanaimo Port Authority are located.

Norwegian Pearl's inaugural visit May 7, 2011.



"This included the need for ground stabilization up to a depth of 10 metres onto bedrock using vibro-compact stone piles. These piles prevent the underlying soils from liquefying and the building sinking in an earthquake," says George Hrabowych, project manager. "On top of these stone piles, a reinforced pad of compacted fill was built to allow the use of conventional strip and pad foundations for the building. Another important design feature was the discrete use of roof bracing by the structural engineer to avoid spoiling the view in the glazed hull."

Hrabowych says it was a pleasure to work with the consulting teams from local companies, and having the opportunity to work with the Snuneymucw (Nanaimo) First Nation. "We had over 1,000 man-hours from First Nations people as they worked with various sub-trades and contractors." The Snuneymucw played an integral part in ensuring the project proceeded in a sustainable manner by addressing environmental needs. It was also important to respect the Douglas Treaty rights.

The West Coast design of the Welcome Centre and offices is a mix of wood and glass, a product of the architectural joint venture between David Poiron Architect Inc. and Ben Checkwith Design. "The building was constructed with a combination of a steel frame and glulam post and beam," says David Poiron, principal, David Poiron Architect Inc. "Part of this facility is dedicated to Canada Border Services Agency (CBSA), a high-security office for passenger verification. Once people pass through this area, they will be in a beautiful, wood-framed open hall with floor-to-ceiling windows on three sides looking out to Nanaimo's Inner Harbour and the city."

He notes that durable slate floors were chosen to withstand foot traffic, and materials are neutral to reflect the site and waterfront. "The curved glulam were an interesting addition as the Douglas Fir wood slats wrap around the ceiling and inner columns, making the interior look like the hull of a giant

ship," says Ben Checkwith, principal, Ben Checkwith Design. "This reflects the history of wood production on the assembly site and the region in general." Dividing the Welcome Centre's main room and the Canada Border Services Agency section is a retractable First Nations mural, created by local artist Noel Brown.

While in the Welcome Centre, guests will see another unusual structural design - the floating box that houses the NPA administration offices. "It appears to be floating in mid air, but it actually has hidden structural steel components holding it together," says Colin East, project manager, Heatherbrae Builders Co.

The facility has the latest technology and construction to meet future needs of the industry. "We are expecting to handle all the ships on the Alaska run, most of which would originate in Seattle," says Dumas. "The terminal is designed to accommodate larger vessels in the future, with some additional dredging. We are very proud of the project and the fast turnaround. It will change the waterfront in Nanaimo with a style that we can incorporate into other buildings on the assembly wharf." ■

LOCATION
100 Port Drive
Nanaimo, B.C.

OWNER/DEVELOPER
Nanaimo Port Authority

PROJECT MANAGER/STRUCTURAL & CIVIL CONSULTANT (LAND WORKS)
Hoffschild Engineering Ltd.

PROJECT MANAGER/PRIME MARINE WORKS CONSULTANT (MARINE WORKS)
CH2M HILL Canada Limited

ARCHITECTS IN JOINT VENTURE (LAND WORKS)
David Poiron Architect Inc. and Ben Checkwith Design

GENERAL CONTRACTOR (LAND WORKS)
Heatherbrae Builders Co.

GENERAL CONTRACTOR (MARINE WORKS AND VIBRO-COMPACTATION)
Vancouver Pile Driving Ltd.

STRUCTURAL CONSULTANT (MARINE WORKS)
Wuxley Parsons & Associates Ltd.

MECHANICAL CONSULTANT (LAND WORKS)
Rocky Point Engineering Ltd.

ELECTRICAL CONSULTANT (LAND WORKS)
R&B Engineering Ltd.

GEOTECHNICAL CONSULTANT (LAND WORKS)
Lawson Engineering Associates

FIRE PROTECTION CONSULTANT
Design Ltd.

ENVIRONMENTAL/GEOTECHNICAL SUB CONSULTANT (MARINE WORKS)
EBA Engineering

MARINE WORKS SUB CONSULTANT
PND Engineers Inc.

CIVIL CONTRACTOR (LAND WORKS)
Wuxley Contracting Ltd.

TOTAL AREA
13,000 square feet - Welcome Centre

TOTAL CONSTRUCTION COST
\$24 million

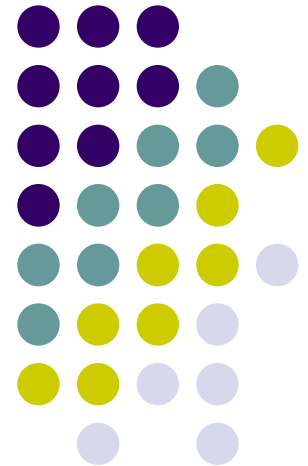
Nanaimo Cruise Ship Facility

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JUNE 2011 **hard** / 85

The Project

Video



Appendix

Hard Copies

- Promotional Material
- Award Magazine Editorial
- Prime Minister Stephen Harper's Letter

