



The new outfitting pier at Seaspans Vancouver Shipyards, seen from the south. Three tower cranes are located in offside crane pockets, leaving the pier deck clear while allowing lifting of materials and equipment from pier to ship at several locations simultaneously.

PHOTO COURTESY OF SEASPAN

# Alongside at Seaspans Vancouver Shipyards

By David Conn

In a busy shipyard where space is at a premium, one key to meeting tight schedules is having the right dedicated facilities for each stage of a project. That means reserving critical building berths for the structural assembly process only, and moving completed hulls to a dedicated outfitting facility for the often equally long final outfitting process.

Typically, outfitting is done alongside a pier. In the past the process involved multiple trades installing all of a vessel's equipment throughout the floating hull/superstructure. Since its modernization, Seaspans Vancouver Shipyards now designs and constructs vessels in blocks. The individual blocks are constructed in a specialized shop, with all services such as piping, wiring, cabling and ductwork pre-installed. These pre-outfitted blocks are then arranged and welded together in

the building berth. After the vessel's launch, final outfitting is still necessary. Vessels have become more complex, and the newly assembled machinery and service components in each block need to be connected and tested. Many different ship systems need to function together.

The previous wooden pier at Vancouver Shipyards dated back to 1966. Seaspans decided to construct a larger, more permanent, and better equipped pier as the outfitting portion of its 21st century yard infrastructure. The company hired Stantec, a Canadian global engineering consultant, to provide planning, engineering and construction support.

According to Seaspans, "The new outfitting pier is a critical investment for Seaspans Vancouver Shipyards as we build and deliver large vessels for the Canadian Coast Guard and Royal



A close-up view of the new pier shows its structure, with steel pilings, concrete pile caps and concrete deck. Vancouver Shipyards and Stantec worked together on the design. It can handle heavy loads and vehicle traffic, and can withstand sea level rise, storm surges and earthquakes.

Canadian Navy. Prior to the construction of the new pier, the vessels built by Seaspan under the National Shipbuilding Strategy were required to sail to Esquimalt to complete outfitting work at Seaspan's Victoria Shipyards. Keeping the vessels at Vancouver Shipyards to complete outfitting is much more efficient and allows the same production workforce to see the vessel through from start of construction to its completion."

Building the new pier – including the permit process, dredging, demolition of the old pier and construction – took five years according to Seaspan press releases. The construction

alone took 18 months, with substantial completion declared in June 2025. The new pier consists of 148 steel pipe pilings, concrete pile caps and beams to support a concrete deck, covering 272 m by 19 m (892' by 63'). It is designed to withstand sea level rise, storm surges and earthquakes. The structure can handle heavy loads and vehicle traffic.

The new pier is integrated with the shipyard infrastructure. Utilities, including wiring and shore power, are carried in concrete utilidors. Crane pockets serve as bases for tower cranes.

First use of the new pier is for final outfitting of the 174-m joint support ship HMCS PROTECTEUR, launched in December 2024. The vessel combines the functions of tanker, freighter, helicopter base and hospital ship within Canada's naval fleet. It also mounts defensive armament. That means complexity. Final outfitting includes connecting all the block services, installing deck equipment, finishing the accommodation, and applying coatings. Inspection and testing of all systems are also major outfitting functions.

## A high-value asset

Seaspan's Vancouver Shipyards and Stantec worked together on the pier design. Stantec project manager Lance Menzies stated that Seaspan specified the overall size and layout, the fendering systems, crane strategy and vessel interface requirements. The shipyard also chose the locations of utilidors, service connections and ship-side utilities. Stantec worked closely with the shipyard and Portwise, the owner's



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engineer, at regular design coordination meetings. Shipyard staff reviewed key deliverables from the consultants and provided critical feedback. Menzies concluded, “This collaborative approach ensured the final design was not only technically robust, but also aligned with how the pier would be used day-to-day within an active shipyard.”

Utilidors are utility conduits that are an integral part of the new pier. “They are a key feature,” Menzies noted, “providing a permanent and organized distribution system for the services required to support vessel outfitting at berth. They carry a range of mechanical and electrical services, including black and grey water, domestic and fire water, and gases used for shipbuilding ... such as propylene, oxygen, compressed air and CO2. On the electrical side, the utilidors accommodate power distribution, communications, lighting, fire alarm systems and CCTV, along with cabling for shore power connections, welding receptacles and crane operations. By integrating these services into the pier structure, the utilidors eliminate the need for temporary hoses and cables, improving safety, reducing setup time, and allowing multiple outfitting activities to occur in parallel along the length of the pier.”

Menzies summarized the value of the new infrastructure: “The pier is designed as a dedicated workspace where vessels can be brought alongside to complete mechanical, electrical and systems installation, followed by testing and commissioning.”

Three tower cranes are an unusual feature of the new pier. Located in offside crane pockets, they leave the pier deck clear




PHOTO COURTESY OF SEASPAN

Seaspans Vancouver Shipyards from the north. The building berth is in foreground and the new outfitting pier on the right, with HMCS PROTECTEUR alongside.

and allow lifting of equipment, materials or assemblies from pier to ship at several locations simultaneously.

Menzies pointed out, “Environmental performance was also a key focus. All stormwater from the pier deck is captured and conveyed back to shore for treatment before discharge, eliminating direct runoff into Burrard Inlet.”

Once HMCS PROTECTEUR is completely outfitted and commissioned, the next use of the new pier will be final outfitting of the sister naval joint support ship, HMCS PRESERVER, which is scheduled to be launched later in 2026. ▶



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