

## Monitoring massive toxic cleanup with Axis.

Multiple stakeholders share Axis network cameras video to track remediation progress in Vancouver Island's Rock Bay.



**Organization:**

Transport Canada/Public Works & Government Services, Canada

**Location:**

Vancouver Island, Canada

**Industry segment:**

Critical infrastructure

**Application:**

Remote monitoring

**Axis partners:**

Tremain Visual,  
Bullet Security Cameras,  
Exacq Technologies

### Mission

When the Canadian government mandated that Transport Canada clean up the toxic seepage in its property in Rock Bay on Vancouver Island, British Columbia, the magnitude of the remediation project was nearly overwhelming. From the 1860s to the early 1950s, a coal gasification company had operated on the site, dumping tons of contaminated waste into the soil, groundwater and harbor. Transport Canada needed a team of experienced partners to help it reverse the devastating environmental impact to the harbor and surrounding land. With off-site managers, stakeholders and consulting engineers to keep apprised of remediation activity on a daily basis, Transport Canada needed an innovative way to continuously communicate mission-critical moments of the project.

### Solution

Transport Canada turned to Tremain Visual, a Canadian company based in British Columbia that specializes in time-lapse video deliverables for project analysis and construction reports. Teaming with Bullet Security Cameras of British Columbia, the two companies

implemented a solution using Axis HDTV-quality, ruggedized fixed and pan/tilt/zoom network cameras that would allow contractors, consultants and government officials to view site cameras in real-time. Tremain also applied its own online portal so that the site could be reviewed via time-lapse video. This automated daily weekly and monthly time-lapse video streamlined reporting and reduced travel for off-site officials, their partners and the various government agencies involved in remediation oversight.

### Result

Because of the exceptional HDTV-quality and high-speed precision 32x optical zoom of the Axis cameras, Tremain programmed the camera to extract highly detailed still images of each site in a precise grid pattern. They then use customized software to stitch those together to create large-format, panoramic print posters that Transport Canada can use for documentary purposes. The large-format, incredibly detailed photographs are also used for news releases and animated 360-degree tours of the remediation site.



## Cleaning up 150 years of toxic waste

Since 1996, Transport Canada and BC Hydro have been working together to resolve contamination issues in the upper harbor in the Port of Victoria in British Columbia. With the completion of Stages 1 and 2, Transport Canada is currently embarked on Stage 3 of the Rock Bay Remediation Project, which represents some of the most contaminated sediment in all of Victoria Harbor.

The process includes the removal and off-site treatment of 32,000 tons of hazardous and non-hazardous waste sediment from Rock Bay and an additional 37,000 tons of contaminated soil from the adjacent uplands surrounding the bay. A cofferdam erected on the site is draining over 500,000 gallons of water from the bay to expose and allow excavation of the contaminated seabed below. An on-site waste treatment facility is treating the waste-water and eventually returning it to the harbor.

The massive environmental reclamation project draws on the expertise of hundreds of contractors, consultants and environmental, industrial and geotechnical experts across the Canadian provinces. Sharing observations of multi-site activity among geographically dispersed stakeholders required an innovative approach to project management.

To that end, Transport Canada procured Tremain Visual, a visual data company specializing in collecting and supplying daily time-lapse video files and live site monitoring to remote users. These services are utilized for project analysis, project management, historic archiving, construction reports and promotion. Working with Axis partner, Bullet Security Cameras, Tremain established a secure network of HDTV-resolution AXIS Q6045-E Mk II and AXIS Q6035-E PTZ Dome Network Cameras and AXIS P3364-VE Fixed Dome Network Cameras.

"We especially chose the AXIS Q60 series because of their extreme reliability," said Scott Sheldrake of Bullet Security Cameras. "They're rated for continual use so you can literally have the camera panning and zooming 24 hours a day and the motor isn't going to die."

The precision of the PTZ feature was also important for creating the large-scale panoramic posters that display remediation progress. "With these high-end cameras, there's no gear slippage," said Leah Tremain, founder and CEO of Tremain Visual. "So we can precisely program the PTZ feature to capture still shots in a specific grid pattern that we can stitch together to create crystal-clear, highly-detailed prints in formats as large as 30,000 pixels wide."

### Keeping everyone in the loop

"Because this is a federal government project we set up a Canada-only private network to our cloud-based collocation facilities in Toronto. There, we archive time-lapse photos off-site, process them into time-lapse video and serve them to our clients through a web portal" explained Tremain. Besides edge servers and cloud backups, Tremain provides local-onsite media rotation to ensure that all mission-critical data is collected and archived in a number of ways for the duration of the project.

"Stakeholders log onto a secure web portal to access our daily, weekly and monthly time-lapse video," said Tremain. "It doesn't matter whether they're sitting in a federal office in Ottawa, an office in Vancouver or even a remote field operations center in Richmond or Seattle."

For consultants like Anchor QEA, the company that reviews shoring, excavation and restoration, having access to live and time-lapse video allows them to keep track of project details even when the managers cannot be on-site.



**“The HDTV-quality of the Axis network cameras enable all the parties involved to see what’s going on at the sites at any given moment. Using our proprietary time-lapse software we can give them a video synopsis of the day in one minute.”**

**Leah Tremain, founder and CEO of Tremain Visual.**

“I’m only on the Rock Bay site every other week, but the time-lapse videos help me stay on top of project progress,” said Mike Roberts, PE, CCM, senior construction manager for Anchor QEA. “On a busy site like this, with everyday demands to observe critical work, it helps me prevent ancillary items of work from being overlooked.”

David Meikle, general superintendent in charge of field operations for the remediation project, finds the ability to live view activity has been a huge cost savings. “I’m in Richmond, BC, on the mainland and the site is on Vancouver Island. So this remote monitoring system saves us the cost and time of commuting to Rock Bay,” noted Meikle, who works for Quantum Murray, one of Canada’s leading environment and industrial services companies.

Meikle often uses the cameras to watch and remotely direct field actions like loading barges. He uses the 360-degree panoramic features of the Axis cameras to conduct remote live tours of the site with his managers and supervisors, keeping them up to date on the project’s progress. Having worked with Tremain Visual on a previous project, he especially likes the time-lapse videos. “It’s a powerful way to showcase a project and let people see the work we’ve done,” added Meikle.

According to Leah Tremain access to the live and time-lapse video has been especially valuable for people involved in the project who might not have construction background. “In the past they might have asked why the project was costing so much or why it was taking so long,” concluded Tremain. “Once they can see what’s going on, most of those questions go away.”



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# About Axis Communications

Axis offers intelligent security solutions that enable a smarter, safer world. As the global market leader in network video, Axis is driving the industry by continually launching innovative network products based on an open platform - delivering high value to customers through a global partner network. Axis has long-term relationships with partners and provides them with knowledge and ground-breaking network products in existing and new markets.

Axis has more than 2,000 dedicated employees in more than 40 countries around the world, supported by a network of over 75,000 partners across 179 countries. Founded in 1984, Axis is a Sweden-based company listed on NASDAQ Stockholm under the ticker AXIS.

For more information about Axis, please visit our website [www.axis.com](http://www.axis.com).