



**GWAI**  
ENGINEERING



**Job Shadowing Opportunity**

**Date: September 20, 2023**

Re: Description of High School Job Shadowing  
Opportunities at Gwaii Engineering Ltd.

From: Julia Barron  
Attention: Lindsay Johnson

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**Attachments:**

Attachment 1: Company Brochure

## 1 Overview

The Team at Gwaii Engineering Ltd. (Gwaii) is excited to invite high school students from School District 61 to participate in a day of job shadowing at Gwaii's office in Victoria, BC. We are passionate about increasing the diversity of the engineering workforce, particularly those who identify as: Indigenous, women, LGBTQ2S+, POC, people with disabilities, and others. We are offering one position each month to a student of choice who applies to the program, starting in November. It will be a day-long job shadow from 8:30am – 4:30pm, offering the opportunity to see what it's like to be an engineer/scientist working for an Indigenous-owned civil and environmental engineering company. The student will be exposed to a diversity of roles around the office, working with four different people throughout the day. We've attached our company brochure for more information on our recent projects, list of services, and staff.

After hosting two successful job shadowing experiences in Spring 2023, we are excited to continue this program in the 2023/2024 school year.

## 2 Job Shadow Details

The student will be exposed to a diversity of tasks throughout the day as they spend time with different people and roles at the company. The following section outlines the schedule for the day, as well as the people and tasks the student can expect.



## 2.1 SCHEDULE OVERVIEW

*Office Orientation: 8:30am – 9:00am*

### **First Nation Project Coordinator**

*Julia Barron & Alyssa Randall*

*9:00am – 10:30am*

Join Julia & Alyssa to learn how to coordinate civil and environmental engineering projects for First Nations across BC. Communicating with clients, scheduling, task management, and report writing.

### **Environmental Engineer**

*Hannah Nixdorf*

*10:30am – 12:00pm*

Join Hannah to learn what an environmental engineer does. Investigating soil and groundwater contamination, sampling and data analysis, report writing, and project coordination.

*Lunch (provided): 12:00pm – 1:00pm*

### **Civil Design Technician**

*Jared Smylie & Amanda Felice*

*1:00pm – 2:30pm*

Learn how to use the powerful computer program called Civil3D with Jared & Amanda. Create engineering drawings and designs for local development projects including water, sewer, and storm servicing.

### **Project Management & Company Principal**

*Mike Achtem & Josh Bartley*

*2:30pm – 4:00pm*

Spend time with Mike & Josh to see how he manages two companies and acts as the project manager on hundreds of projects. Attend meetings, take notes, communicate with clients, and manage office staff.

*End of Day Debrief: 4:30pm – 5:00pm*



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ENGINEERING

## **ATTACHMENT 1: Company Brochure**



# GWAI

ENGINEERING

CIVIL & ENVIRONMENTAL ENGINEERING  
PROJECT & CONSTRUCTION MANAGEMENT  
COMMUNITY ENGAGEMENT & GRANT WRITING

Strength Through Relationships





## Gwaii is an Indigenous owned and operated consulting firm

We service and build capacity with First Nation and Indigenous communities through infrastructure development.

Gwaii and its team of engineers, geoscientists and project managers have been successfully designing and developing infrastructure in B.C since 1982. From initial funding applications to project completion, our focus is on your community and maintaining high standards at every stage.

Indigenous owned and operated, we understand our First Nation clients' and communities' needs from day one. Our team oversees every aspect of infrastructure development ensuring your community is delivered a solution that is built to last.

In all the communities we service, Aboriginal hiring and capacity building is prioritized throughout the procurement process.



At Gwaii we provide a wide variety of services to our clients, some recent project examples include:

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***Tsawout First Nation's Longhouse:*** Civil engineering, storm water management

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***Malahat First Nation:*** Wastewater feasibility, boat launch and parking facility

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***CRD McLoughlin Point Wastewater Plant:*** Environmental engineering

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***Witset First Nation band housing:*** Environmental assessments

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***Shíshálh Nation developments:*** Civil engineering, construction management

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***Old Masset Clean Energy:*** Grant writing

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***Seabird Island Band:*** Boat launch and civil infrastructure design

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***Tla'amin Nation:*** Civil engineering for Nation subdivision

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***Yuulu?il?ath Government:*** Multi-use pathway and Resort development feasibility

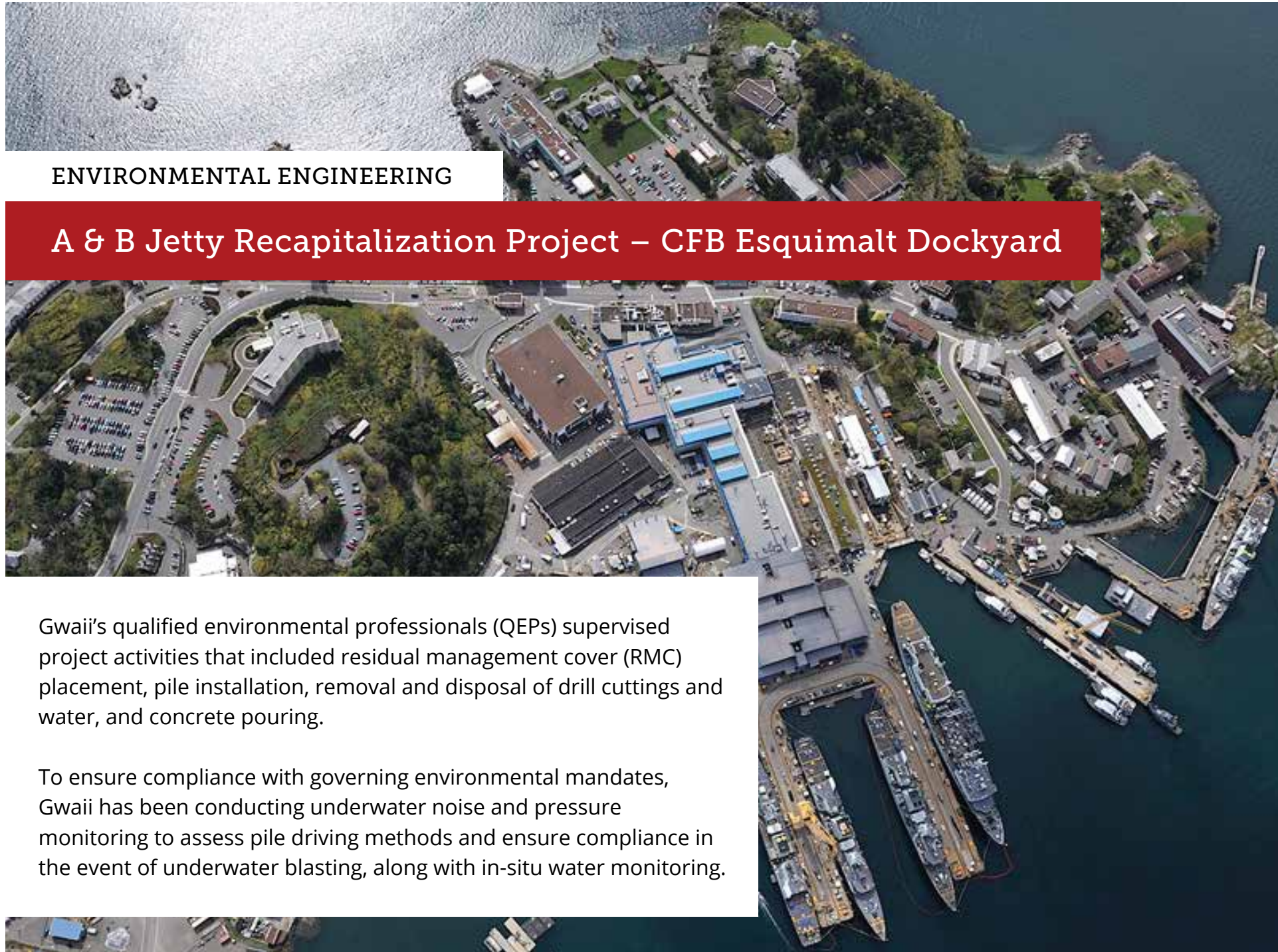
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***Community engagement and Indigenous relations initiatives***

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## ENVIRONMENTAL ENGINEERING

### A & B Jetty Recapitalization Project – CFB Esquimalt Dockyard

Gwaii's qualified environmental professionals (QEPs) supervised project activities that included residual management cover (RMC) placement, pile installation, removal and disposal of drill cuttings and water, and concrete pouring.

To ensure compliance with governing environmental mandates, Gwaii has been conducting underwater noise and pressure monitoring to assess pile driving methods and ensure compliance in the event of underwater blasting, along with in-situ water monitoring.



## CIVIL ENGINEERING

### Malahat Business Park and Boat Launch

Gwaii provided civil engineering services for the Malahat Nation on both their new Boat Launch and their Business Park. We designed the new boat launch, as well as access roads in and out, drainage facilities, trailer & car parking areas, plus a trail network and viewing platforms around the site. For the Business Park, we developed a Stormwater Management Plan and completed a Grading & Earthworks Plan for Phase 1 of the project.

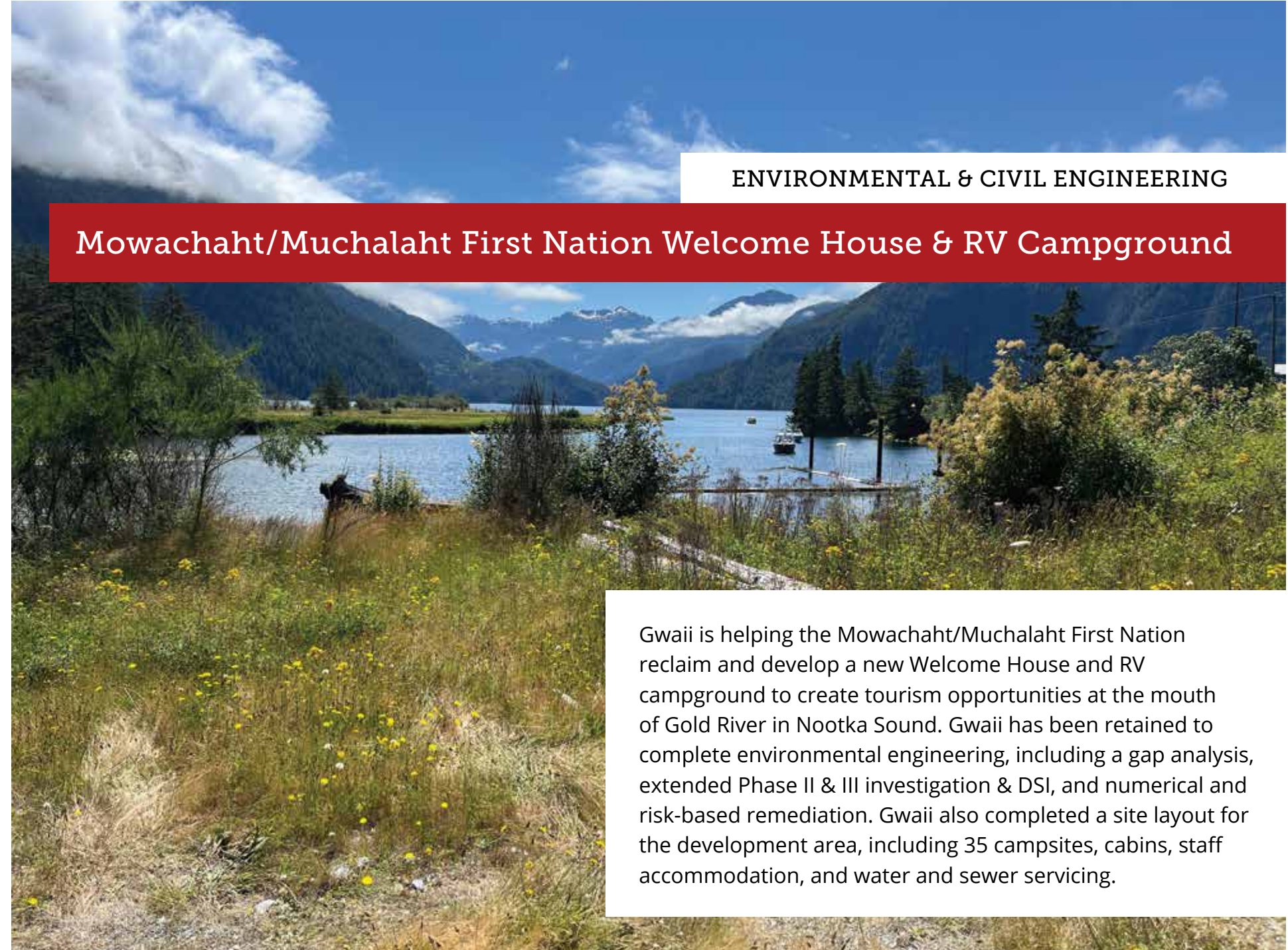




CIVIL ENGINEERING

## Tsain-Ko Village Shopping Centre

The Crown Jewel of shíshálh Nation, the Tsain-Ko Centre (Tsain-Ko Village Shopping Centre), is home to many national retailers with over 87,500 sq ft of shopping area.



ENVIRONMENTAL & CIVIL ENGINEERING

## Mowachaht/Muchalaht First Nation Welcome House & RV Campground

Gwaii is helping the Mowachaht/Muchalaht First Nation reclaim and develop a new Welcome House and RV campground to create tourism opportunities at the mouth of Gold River in Nootka Sound. Gwaii has been retained to complete environmental engineering, including a gap analysis, extended Phase II & III investigation & DSI, and numerical and risk-based remediation. Gwaii also completed a site layout for the development area, including 35 campsites, cabins, staff accommodation, and water and sewer servicing.





PROJECT MANAGEMENT

## Mowachaht/Muchalaht First Nation Chalet Renovation

Gwaii is acting as the Nation's Project Manager for the renovation of a Chalet that was purchased by the Nation. Gwaii led the hiring and oversight of multiple contractors and consultants, including hazmat remediation, renovation, environmental investigation, and future expansion. By the end of the Project, Gwaii will have assisted the Nation create a fully renovated hotel, offering a competitive business in the town of Gold River.



CIVIL & ENVIRONMENTAL ENGINEERING, PROJECT MANAGEMENT

## Tlaa Gwaa Atlaas (New Town) - Subdivision Design Project

Gwaii is providing both civil & environmental engineering services for all three phases of the Subdivision Design project in Haida Gwaii, funded by Indigenous Services Canada (ISC):

- Phase 2 Environmental Site Assessments (ESAs) for all phases of the subdivision in compliance with ISC guidelines.
- Civil engineering consultant on the design-build project team for Phase 2, including detailed servicing design.
- Lead design and project management for Phase 3, including overall area feasibility assessment, detailed design, environmental investigation, coordination with geotechnical & archaeological consultants, and habitat mitigation.





ENVIRONMENTAL ENGINEERING

CRD McLoughlin Point Wastewater Treatment Plant

The McLoughlin Point Wastewater Treatment Plant in Esquimalt can treat 108 megalitres of wastewater per day to a tertiary level for the Capital Regional District – one of the highest levels of treatment available. GWAll's principals led the remediation efforts which included the removal of over 30,000 tonnes of contaminated soils.

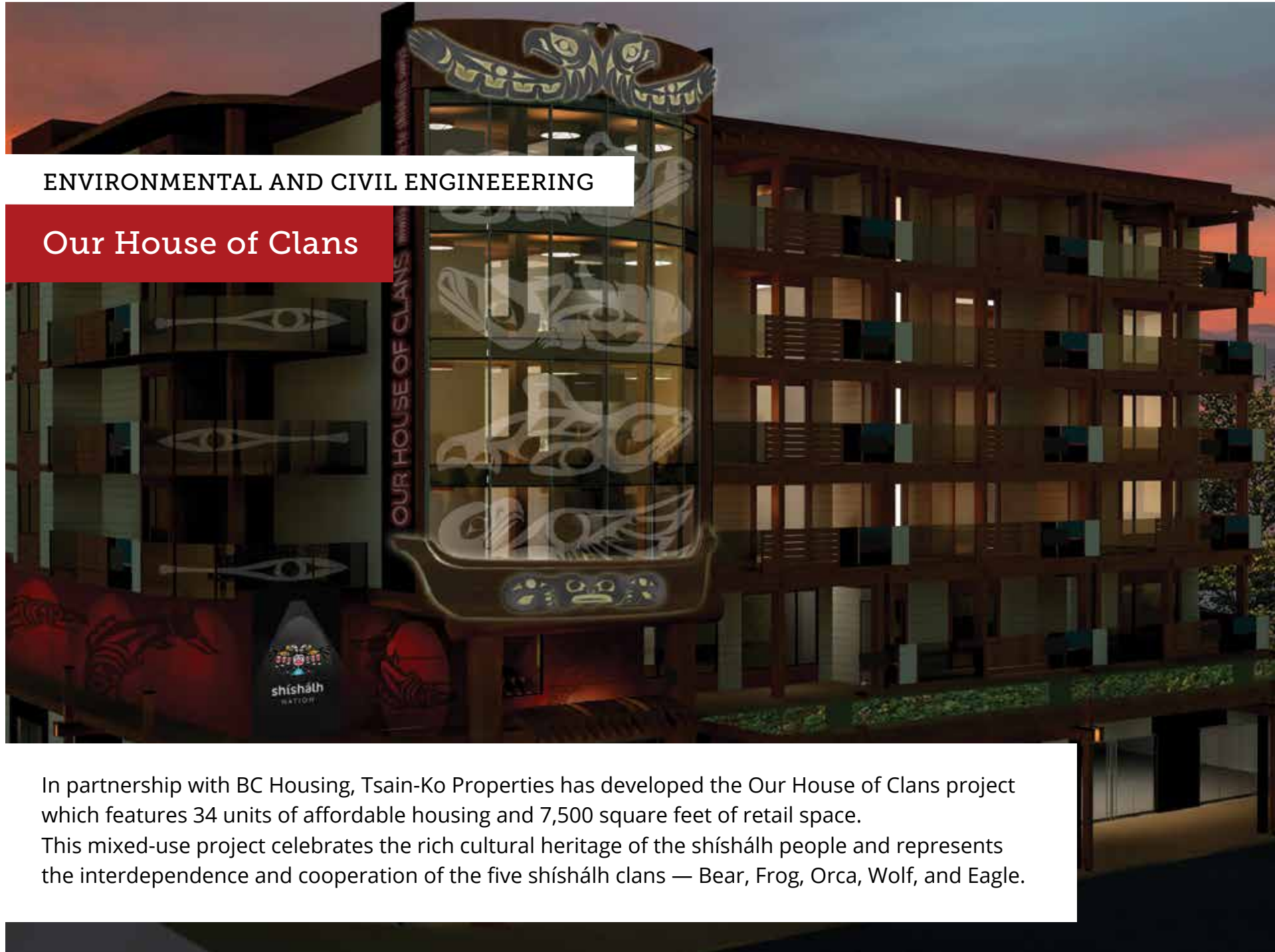


PROJECT MANAGEMENT

Tsawout First Nation's Longhouse

After the Tsawout Nation lost their Longhouse in a devastating fire in 2009, GWAll worked with the Nation to pull teams together and assisted with the funding applications to make the project more viable. GWAll is now overseeing the project management on their new ceremonial longhouse which is slated for completion in summer of 2022.





## ENVIRONMENTAL AND CIVIL ENGINEERING

### Our House of Clans

In partnership with BC Housing, Tsain-Ko Properties has developed the Our House of Clans project which features 34 units of affordable housing and 7,500 square feet of retail space. This mixed-use project celebrates the rich cultural heritage of the shíshálh people and represents the interdependence and cooperation of the five shíshálh clans — Bear, Frog, Orca, Wolf, and Eagle.

#### CIVIL ENGINEERING

- Water modelling and network analysis
- Water and wastewater treatment design
- Sewer system design
- Site layout and grading
- Road design
- Septic system design
- Stormwater design
- Sediment and erosion control plan
- Subdivisions and housing developments
- Pump station design
- Commercial and industrial developments
- Feasibility studies
- Utility and site servicing
- Liason with municipal, provincial and federal regulators
- Project proformas and cost estimating
- Assistance with compliance issues

#### PROJECT MANAGEMENT

- Scheduling
- Earned value analysis
- Client/contractor liasing
- Risk management
- Budgeting and tendering
- Contract administration

#### GRANT WRITING

- Funding option identification
- Grant applications
- Communication with funding agencies
- Funding advocacy
- Quarterly newsletters and database sharing
- BC Housing & CMHC funding applications

- ISC funding applications

#### ENVIRONMENTAL ENGINEERING

- Hazardous building material surveys
- Asbestos, lead paint, etc.
- Environmental site investigations
- Phase 1/2 stage, 1/2 preliminary site investigations, detailed site investigations, etc.
- Soil, water and air quality characterization
- Soil relocation and disposal
- Contaminated site remediation
- Project management
- Field oversight and supervision
- Environment management plans
- Water quality management
- Soil management
- Air quality management
- Environmental monitoring
- Contaminated sites
- Water quality monitoring (discharge and sedimentation)
- Underwater noise monitoring
- Air quality and noise monitoring
- Water treatment (construction related)
- Fuel tank removal and remediation
- Contract administration

#### COMMUNITY ENGAGEMENT

- Event organization & planning
- Consultation and engagement
- Flyers/questionnaires/newsletter creation or collaboration

#### SURVEY

- Topographic surveys
- Site survey
- Construction layout
- As-built survey

#### CAPACITY BUILDING

- Mentorship opportunities
- Job shadowing
- Community initiatives
- Job fairs
- STEAM education
- Youth engagement
- Indigenous Student Scholarships

#### CONSTRUCTION MANAGEMENT

- Consultant and trades coordination
- Progress review and payments
- Contract administration
- Building code compliance





Nations we've worked with

Tsawwassen First Nation

Qualicum First Nation

Malahat First Nation

K'omoks First Nation

shíshálh Nation

WSÁNEĆ Leadership Council

We Wai Kai Nation

Tobacco Plains Indian Band

Tsawout Nation

Yuutu?it?ath Government

Sc'ianew - Beecher Bay

Tsartlip Nation

Old Masset Village Council

Kitasoo First Nation

Haida Nation

Sik-e-Dakh (Glen Vowell Band)

Ulkatcho First Nation

SDNA Southern Dakelh Nation Alliance

Seabird Island Band

Snuneymuxw First Nation

Songhees Nation

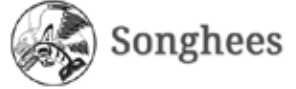
Seabird Island Band

Cowichan Tribes

T'Sou-ke First Nation

Tla'amin First Nation

Mamalilikulla First Nation







**shishálh Nation Annual Career Fair**

We are committed to helping break down barriers between First Nations youth and careers in STEAM - by attending local career fairs, we hope to demystify the field of engineering and inspire youth to pursue careers they might not otherwise have considered.



**Yuulu?if?ath Government Pathway Project & Community Engagement Sessions**

We are honored to have worked with the Yuulu?if?ath Government (Ucluelet) for an exciting new pathway project in their community of hitacu.

A large portion of our work focuses around community engagement, connecting with Elders, youth, and community members who want their voices heard in regards to the project at hand. We put community voices first in the process of engineering and design.



**ᑭEL,ᑭELOFEN ØE S,ISTEW Education Fund Award**

Gwaii recognizes that there are very few Indigenous, First Nations, Inuit, and Métis professionals working in Architecture, Engineering, and Construction. Many firms work with Indigenous communities but few have Indigenous people working within their organizations.

Gwaii is a co-founder and board member of the ᑭEL,ᑭELOFEN ØE S,ISTEW Education Fund which provides an annual award of \$5,000 to Indigenous students pursuing post-secondary education in these fields. This fund shows our commitment to helping Indigenous people pursue careers in our industry.



**GO ENG GIRL Event at the University of Victoria**

This annual event offers girls ages 12-18 with hands-on activities and encouragement to explore engineering as a career path. This is part of Gwaii's ongoing efforts to close the gender gap in engineering fields.



## Delivering solutions that are built to last



**Corey Brown, M.Eng., P.Eng., ASCT**  
FOUNDING PRINCIPAL, CIVIL ENGINEER

Corey is a member of the Old Masset Village Band, which forms part of the Haida Nation on Haida Gwaii. He is a member of the Sta'taas Eagle Clan and is the nephew of the current serving hereditary Chief 7idansuu. Corey is a registered member of the Aboriginal Professional Association of Canada.



**Mike Achtem, P.Eng., PMP, CCA**  
MANAGING DIRECTOR, SENIOR ENGINEER

Mike is a registered Professional Engineer with extensive experience consulting on land development and municipal infrastructure projects throughout B.C. dating back to 1992. Mike is also a certified Project Management Professional as well as a Certified Contract Administrator with the Master Municipal Construction Association.



**Josh Bartley, P.Eng.**  
PRINCIPAL, TECHNICAL DIRECTOR

Josh is a Professional Engineer with a diverse background in the construction, municipal and consulting fields. He approaches projects and capacity building initiatives from a creative and technically sound perspective to support long-term sustainability within communities.



**Brad Harrold, P.Geo., PMP, MBA**  
SENIOR ENVIRONMENTAL MANAGER,  
GEOSCIENTIST

Brad is a registered Professional Geoscientist and Project Management Professional with more than 26 years of diverse environmental consulting experience throughout British Columbia. He holds a Bachelor of Science degree from Simon Fraser University and a Master of Business Administration degree from Royal Roads University.



**Justin Eagle, CET**  
CIVIL DESIGNER, PROJECT MANAGER

Justin is a member of the Whitecap Dakota First Nation, located south of Saskatoon in an area formerly known as Moose Woods. After graduating from Camosun College with a Diploma in Civil Engineering Technology, Justin began working as a Civil Engineering Technologist with Gwaii Engineering. He is a registered member of the Aboriginal Professional Association of Canada.



**Dave Aylesworth, CET**  
SURVEY AND CONSTRUCTION MANAGER

Dave has over six years of Civil Engineering experience throughout Southern Vancouver Island. He has worked on projects large and small as a surveyor, field inspector, and construction contract administrator. With his background in various construction and trade jobs, Dave is able to provide a practical perspective and communicate cost-effective and direct solutions with clients, contractors, and municipal authorities.





**Jason Skjerven, ASCT, PTech**  
SENIOR DESIGN TECHNOLOGIST

Jason graduated from the Northern Alberta Institute of Technology with a diploma in Civil Engineering Technology. Jason has over 20 years experience in BC and Alberta and relocated to Vancouver island in the spring of 2020. Having worked as a civil designer focused on community development throughout his career, he brings a depth of experience to projects of all sizes.



**Zeb Savoie-Velos**  
JUNIOR FIELD INSPECTOR

Zeb is a member of the K'ómoks First Nations, located on Vancouver Island in the Comox Valley. He is a Junior Field Inspector, having received his Environmental Technician Certificate from Vancouver Island University. He is currently a mentee in the Gwaii Engineering Indigenous Environmental Mentorship Program.



**Melina Sorensen, AAG., MSc.**  
JUNIOR ENVIRONMENTAL SCIENTIST

Melina graduated with a Master of Science in Environmental Management in 2022 and with a Bachelor of Science in 2019. She has an educational background in marine ecology, environmental impact assessment, ecotoxicology, and environmental outreach. Melina has experience as a Marine Naturalist & Educator, GIS Analyst, and Stewardship Research Assistant in Government and ENGO organizations.



**Vanessa Quinn, EIT**  
CIVIL PROJECT ENGINEER

Vanessa is a registered Engineer in Training with a degree in Civil Engineering from Lakehead University. Prior to Lakehead she completed her Civil Engineering Technologist Diploma at Camosun College. Vanessa has been involved in the drafting, design, construction, overall coordination, and management of land development projects and has seen numerous projects from conception to completion.



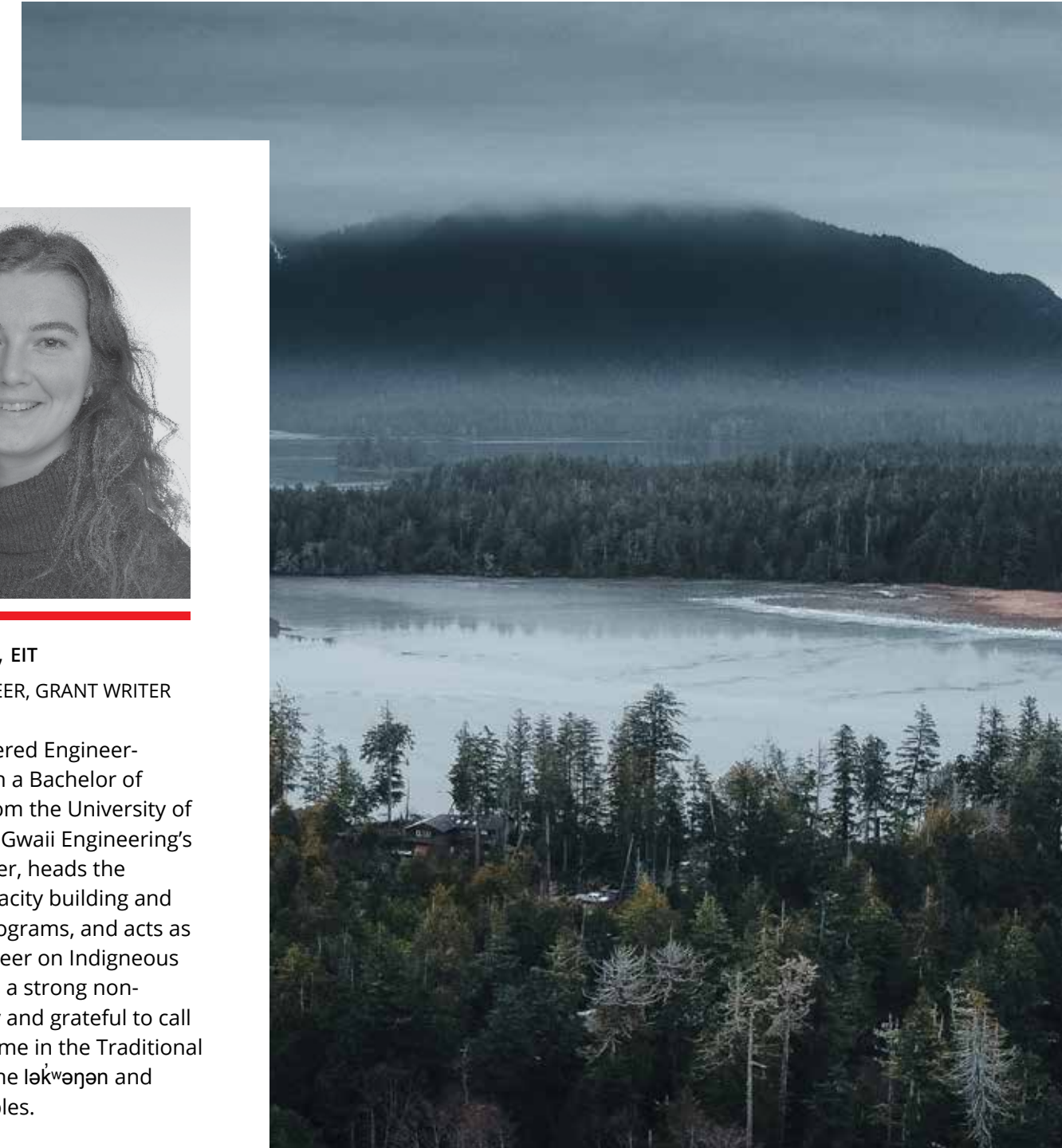
**Katherine Rankin**  
OFFICE ADMINISTRATOR, PROJECT ASSISTANT

Katherine graduated from the University of Victoria with a B.A. in Applied Linguistics, and ventured into teaching ESL and Tourism until she began her administrative career in Environmental Engineering in 2008. She has worked in both the private and public sector, including project and administrative assistant work on multiple Federal Contaminated Sites Action Plan projects (FCSAP).



**Julia Barron, EIT**  
PROJECT ENGINEER, GRANT WRITER

Julia is a registered Engineer-in-Training with a Bachelor of Engineering from the University of Victoria. She is Gwaii Engineering's lead grant writer, heads the company's capacity building and mentorship programs, and acts as a project engineer on Indigenous projects. She is a strong non-Indigenous ally and grateful to call Victoria her home in the Traditional Territories of the lək'wəŋən and W̱SÁNEĆ Peoples.







**James Rees, P.Eng.**  
CIVIL PROJECT ENGINEER

James is a registered Professional Engineer in BC with a civil engineering technology background who obtained his civil engineering degree from University of British Columbia with a focus on water distribution system planning and design. He is a lead design engineer on civil design projects for Indigenous and municipal projects with over 15 years of experience in the industry.



**Joshua Anderson, EIT**  
PROJECT ENGINEER

Joshua Anderson is a registered Engineer in Training with a Bachelors Degree in Civil Engineering from the University of Victoria. His previous work experience includes hands-on construction experience as a pipe layer, civil drafting and design, site investigation, environmental monitoring, soil sampling, and project management.



**Alyssa Randall, EIT**  
CIVIL & ENVIRONMENTAL PROJECT ENGINEER

Alyssa is originally from Northern Ontario, and has Mi'kmaw lineage from South-West Newfoundland. She is a registered Engineer-in-Training with a degree in environmental engineering from the University of Waterloo. Since moving west she has gained experience in both environmental and geotechnical fields.



**Nicholas Liberty, ASCT**  
SENIOR CIVIL DESIGN TECHNICIAN

Nick is a member of the Nipissing First Nation and Mattawa/North Bay Algonquin First Nation, and has Ojibwa lineage originating in The Robinson Huron Treaty Territory in Northern Ontario. He is a Civil Design specialist with over 10 years of industry experience throughout Ontario, BC, and New Zealand utilizing Civil 3D in land development, local government infrastructure, mining and environmental services.



**Jared Smylie, EIT**  
CIVIL PROJECT ENGINEER

Jared is a registered Engineer-In-Training with a Bachelor of Civil Engineering from the University of Victoria. As a member the Civil Engineering team, he prepares design drawings for a variety of projects. Originally from Toronto, Jared enjoys outdoor activities such as canoeing, soccer, and hiking.



**Crosby Stewart**  
JUNIOR ENVIRONMENTAL SCIENTIST

Crosby is a member of the Gitksan and Nisga'a First Nations. He is a Professional Chemist in training with a degree in Chemistry from the University of Victoria. Since graduating he has gained experience working in the analytical chemistry field.



Gwaii Engineering Ltd.  
623 Discovery Street, Victoria, BC, V8T 5G4  
(250) 590-1200



**GWAII**  
ENGINEERING

**FOR RFP ENQUIRIES, PLEASE SEND TO:**

**Civil Projects**

Corey Brown  
cbrown@gwaiieng.com  
250-886-0049

**Environmental Projects**

Brad Harrold  
bharrold@gwaiieng.com  
778-265-5519



Gwaii Engineering has consistently provided Tsain-Ko Development Corporation with a high level of civil engineering design, planning, and advice on a number of our projects since 2017. Gwaii has also been proactive in developing employment opportunities for members of the shíshálh Nation, and have been excellent ambassadors in representing our interests.

— *Jason Jenkins, Director, Tsain-Ko Development Corporation*

At Tsawout First Nation we have been very pleased with the work of Gwaii Engineering. Like many First Nations we are challenged with aging infrastructure for sewer, water, and drainage. We have benefitted from the Team at Gwaii who have jumped in to help us through planned and unplanned intervention projects. Their insights are helpful and we would recommend their company to other First Nations."

— *Mavis Underwood, Councillor, Tsawout First Nation*

[www.gwaiieng.com](http://www.gwaiieng.com)

