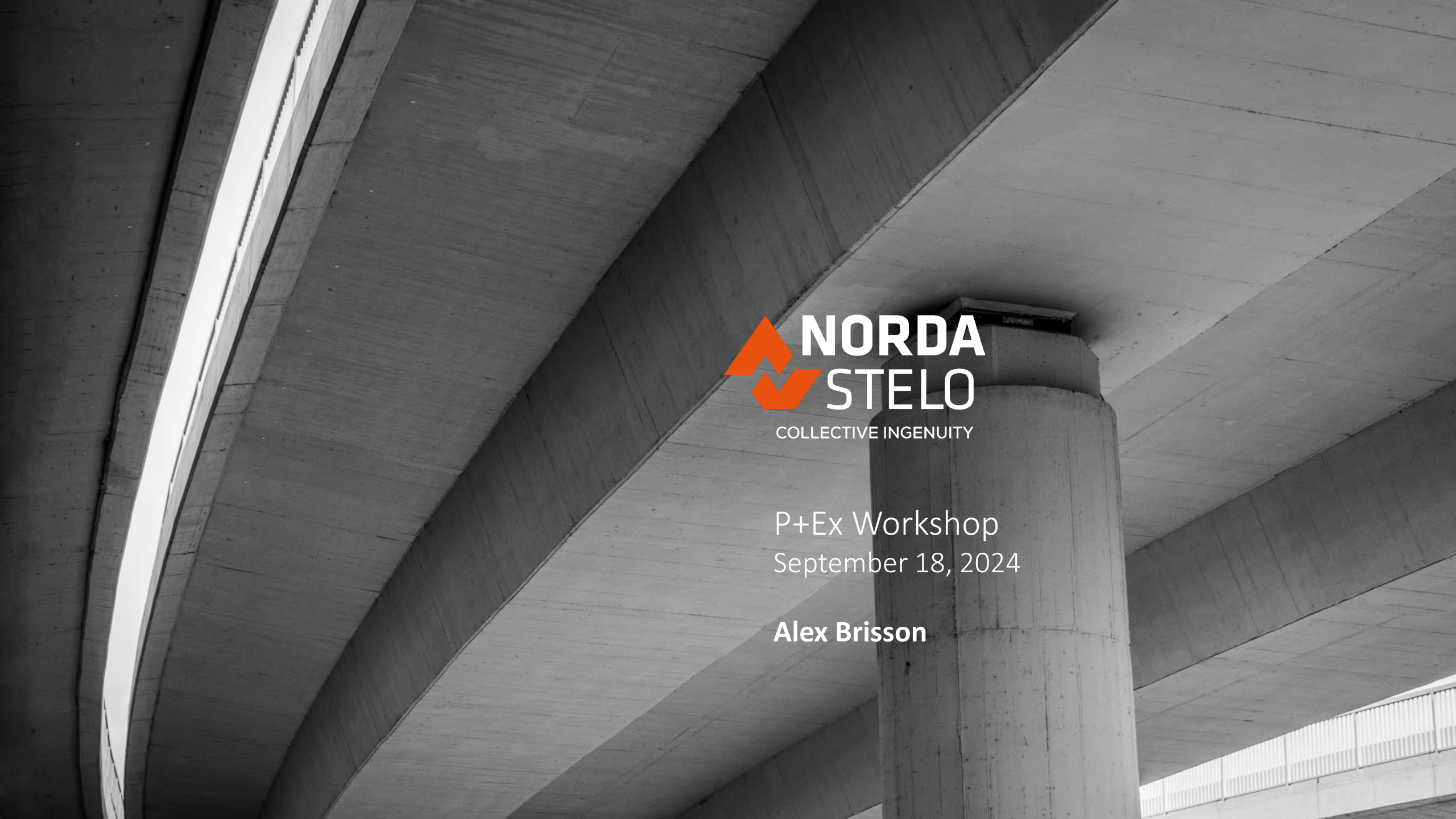


NORDA STELO

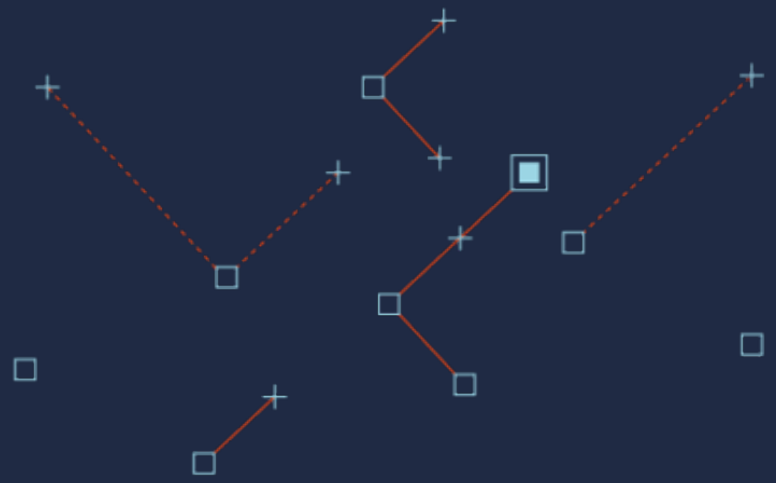
COLLECTIVE INGENUITY

P+Ex Workshop

September 18, 2024

Alex Brisson

We are Norda Stelo



Driving Engineering through Innovation. Together. Sustainably.

Mobilizing the collective intelligence towards the sustainability of our partners' assets, our communities and the planet.

Brown Is the New Green ! MC

18 Offices

- Canada
- USA
- New Caledonia

+900 Professionals

7 Business Sectors

- Energy
- Manufacturing and Processing
- Railway
- Mining and Metallurgy
- Ports
- Roads
- Public Transit

155M$ CAD

Annual Revenue (FY2024)

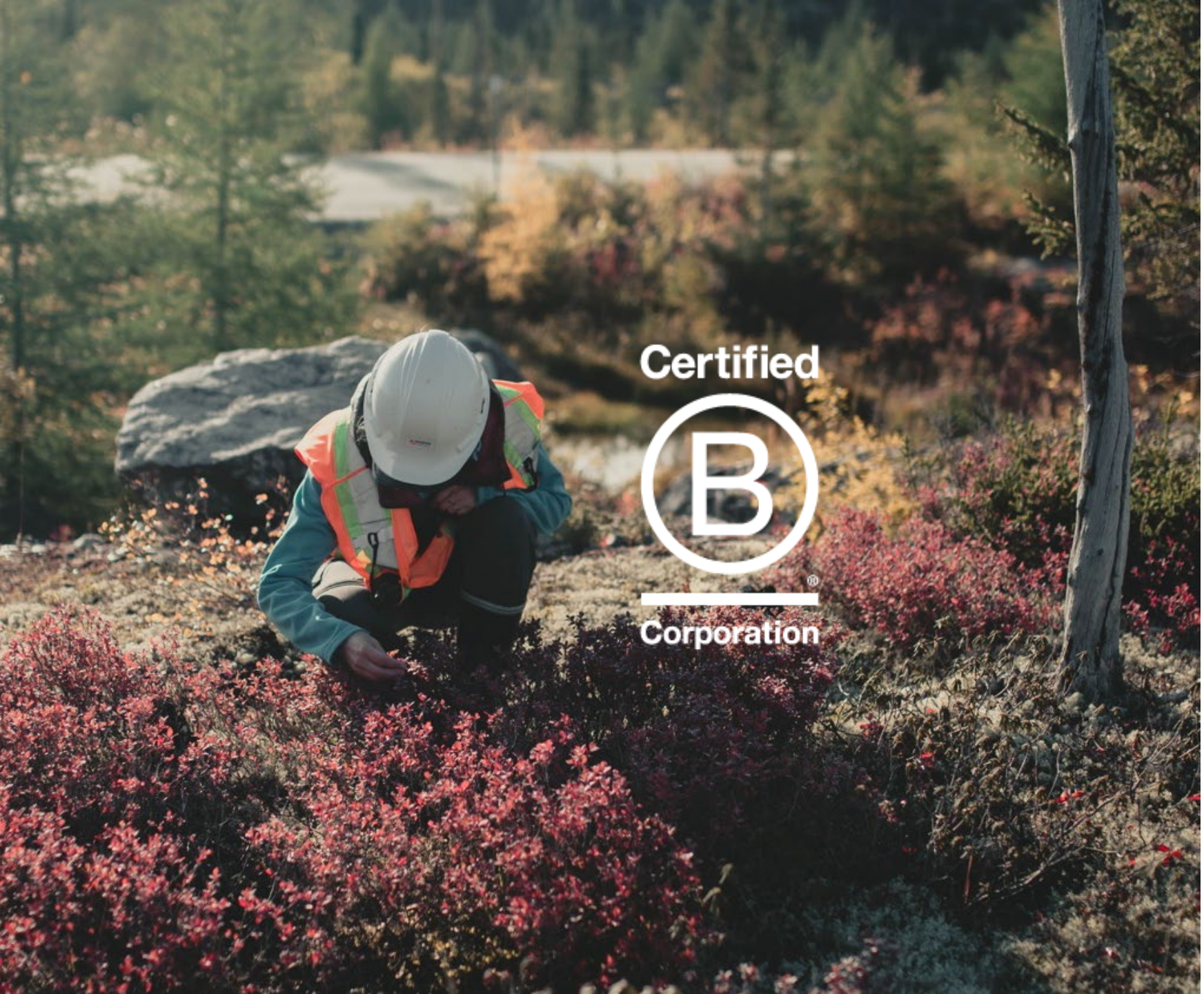
Norda Stelo

Headquartered in Quebec, Canada, Norda Stelo is a leader among medium-sized consulting engineering firms, operating for over 60 years, in 18 offices, throughout Canada and around the world. It carries out projects in some 50 countries.

An independent, employee-owned company, Norda Stelo has expertise in 18 centers of excellence and is active in several markets, including Energy, Manufacturing & Processing, Mining & Metallurgy, Roads, Sustainable Transportation and Smart Mobility.

STELAR

Norda Stelo Solutions was founded in early 2022 to support the development of new technology products, focusing on asset sustainability and productivity.



Norda Stelo becomes the first major engineering firm in Canada to receive the B Corp certification

The Basis of Our Business Model

TRUST

+

SKILLS

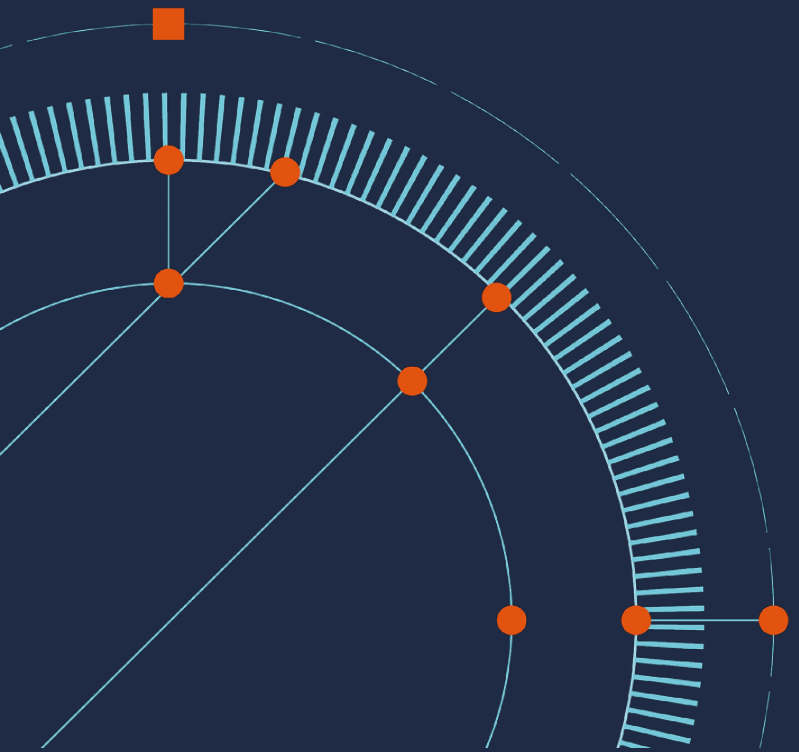
+

LOCAL PRESENCE

=

LONG-TERM PARTNERSHIP

Our Centres of Excellence

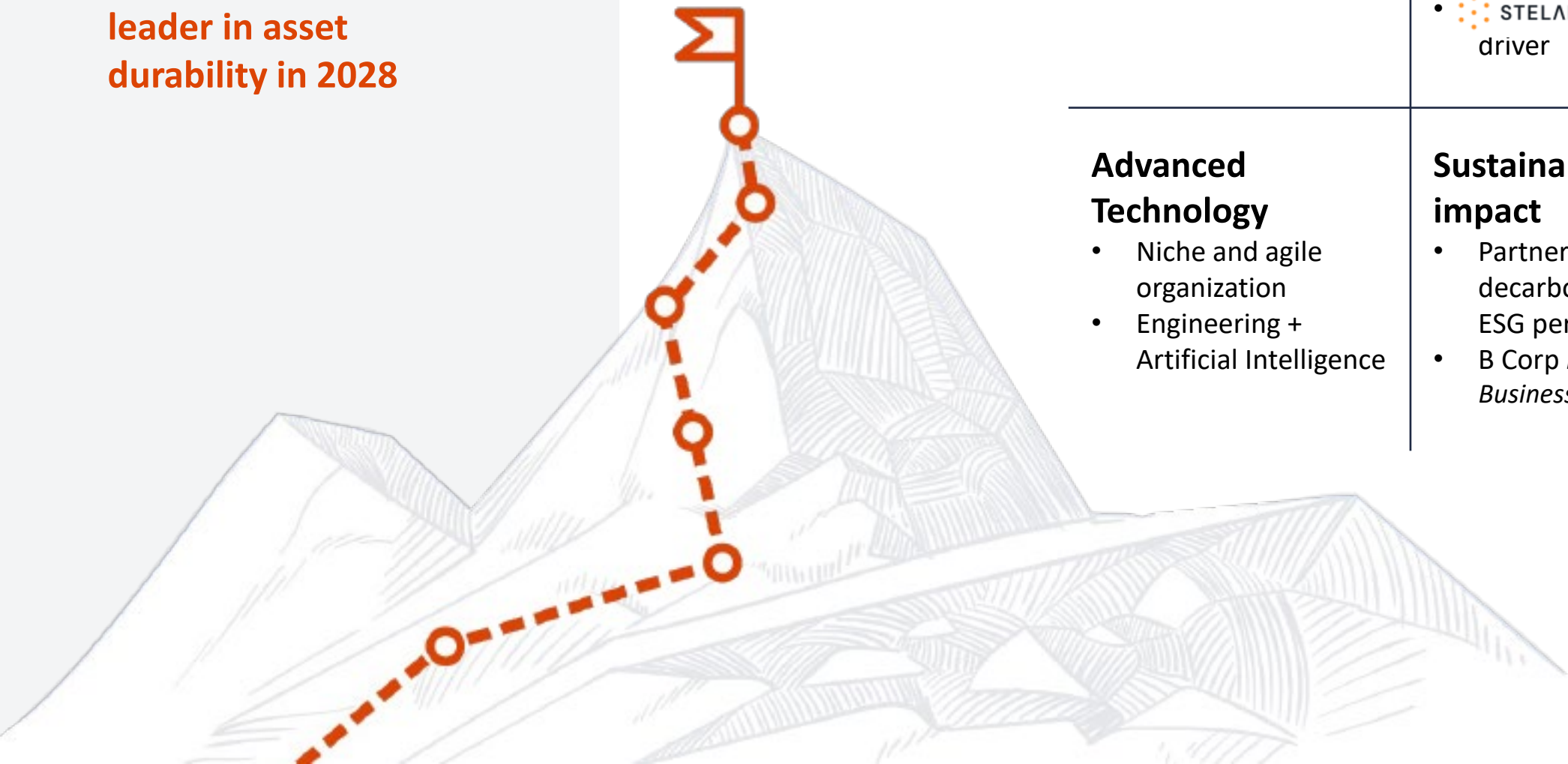


- Environment, Climate Change and Community
- Construction
- Electricity
- Rail
- Asset Integrity and Reliability Management
- Automation, Robotics and Industrial IT
- Building Mechanics and Electricity
- Mechanical and Material Handling
- Mining Engineering
- Smart Mobility
- Bridges
- Ports and Coastal
- Processes
- Roads
- Structure
- Civil and Engineering Works
- Piping and Pressure Vessels
- Geology

ESG
& Asset Management

Our Ambitions

Become the world leader in asset durability in 2028



Growth

- Organic and non-organic

International

- Expand outside Canada
- STELAR as a growth driver

Advanced Technology

- Niche and agile organization
- Engineering + Artificial Intelligence

Sustainable impact

- Partner in decarbonization and ESG performance
- B Corp *Impact Business Model*

Our Growth Business Sectors

- Port
- Railway
- Mining industry
- Energy transition
- Decarbonization - ESG

Strategic Focus

Smart “Site-to-Port”

Delivering solutions to our clients and partners in the mining, rail and port sectors to materialize our growth.

PORT ASSETS

BUILDINGS

PIPING NETWORKS

STRUCTURES

PROCESS TANKS

RAILWAY NETWORKS

PRODUCTION/ PROCESS EQUIPMENT

MOBILE EQUIPMENT

ROADS

BRIDGES

Asset Management

NORDA STELO

Expertise in Asset Management Governance & Intelligent Asset Performance Management

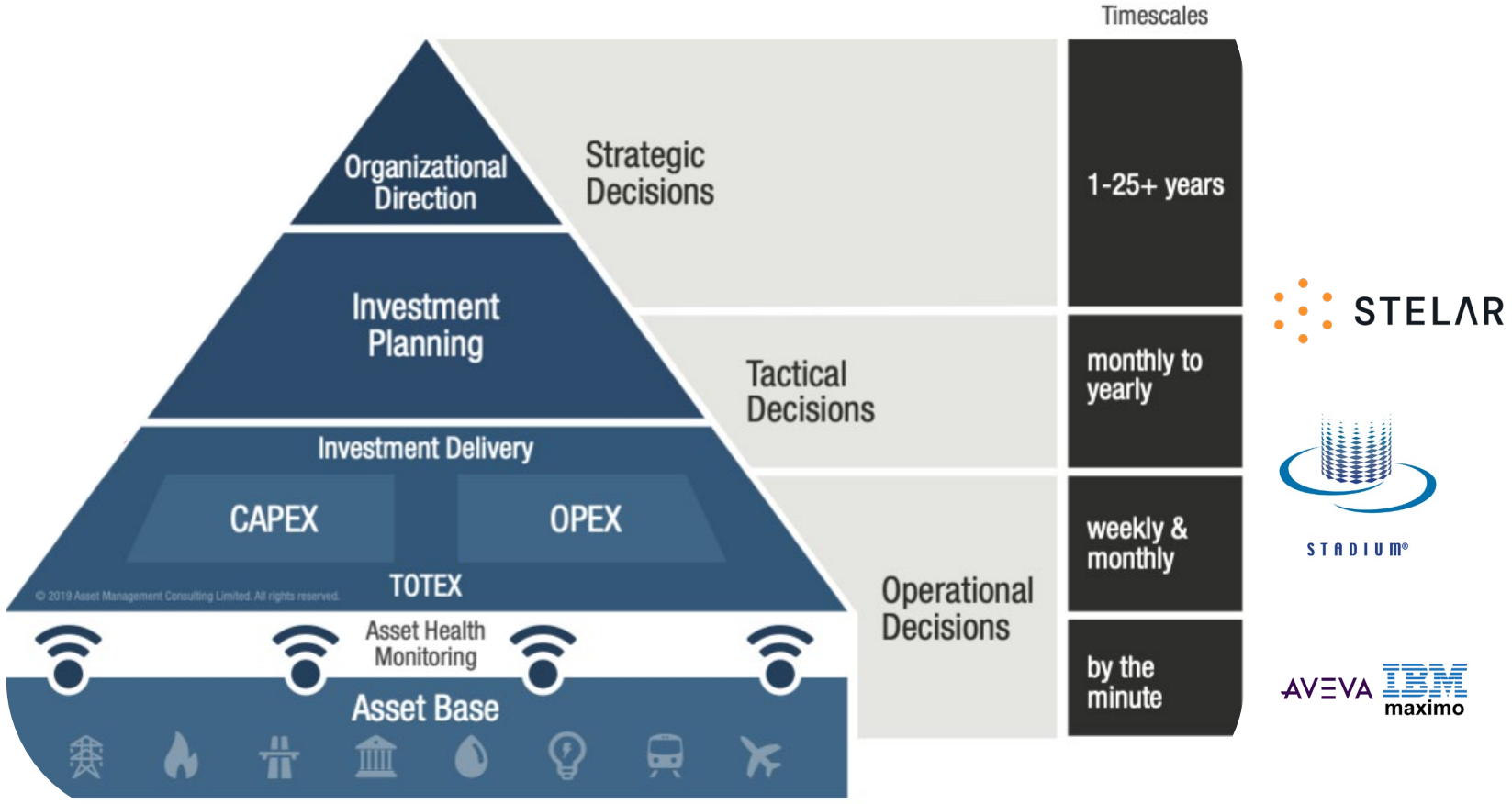
\+

Asset Management Advisory

Institute of Asset Management
www.theiam.org

ISO 55000

Asset Governance



Asset Management
Recent Projects

Asset Integrity Assessment

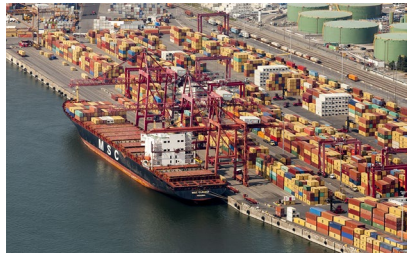
Agnico Eagle Meliadine Mine

Inspection and condition assessment program

Neptune Terminals, Canada

Asset management program advisory

Port of Montreal, Canada



Asset maintenance program for the electrolytic zinc plant

CE Zinc (Glencore), Canada

Asset Management program / Stelar integration at London Gateway

SIMCO Technologies and Norda Stelo combined their strengths in order to support London Gateway in their Asset Management program. SIMCO Technologies, with their extensive experience and qualification in condition assessment of port infrastructures, support London Gateway Port facilities managing the health of their civil assets.
Norda Stelo, with the integration of the **Stelar** platform will facilitate the collection of data on civil work assets and operations linked to asset tracking: health, risk, residual life.

This combined and innovative practice ensures a rigorous follow-up of assets to repair and maintain components according to evolving needs. This prevents deterioration, optimizes use to extend life, and considers the environmental impact of asset management decisions.

Port of London Authority, UK

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STELAR

This Combination Allows to Benefit from Many Capabilities:

- Provides an overview of asset condition, residual life, and assets at risk
- Supports CAPEX and OPEX investment decisions
- Provides insightful financial, environmental, social, and governance (ESG) data
- Reduces downtime, major breakdowns, and unforeseen expenses
- Improves the efficiency of maintenance activities by digitizing operations

STELAR

1. COLLECT, CLEAN UP AND CENTRALIZE DATA

ASSETS

- Inspection data
- IoT data
- CMMS

2. ANALYZE DATA

Statistics, calculations, aggregations, AI

ASSET FILE

General information
Health status
Risk category
Interventions and coming costs
...

SPECIALIZED MODULES

- RBI 581
- Corrosion rate
- Health index
- Defect recognition

Dev.
/ Life Cycle Costs / Residual life
/ Defect severity suggestion
/ Intervention recommendation

3. VISUALIZE AND DECIDE

Visualize data via a dashboard

Plan investments according to recommendations ($ et GHG)

Manage the progress of intervention projects

Predict and alert according to pre-registered parameters

Norda Stelo X Stelar:
Anticipated Benefits

20 to 25%

Increase in the lifespan of assets

50%

Hours saved on capital investment and asset maintenance budget preparation

10%

Savings on maintenance and inspection costs

2 to 6%

Improvement in equipment uptime

Impact on ESG performance

Mesure your asset's ESG performance

Strategies

Present and explain your asset management approach

Concretely address ESG imperatives

Obtain operator collaboration to capture environmental data

Benefits

Justify ESG performance based on objective quantified metrics

Demonstrate that you are taking concrete steps to reduce your environmental footprint

Compound the benefits of a collaborative approach to better leverage ESG performance

Carbon Footprint Module

Combining the Stelar pillars

Pillar 1
Condition assesment and residual life

+

Pillar 2
Risk-based investment planning

+

Pillar 3
Carbon footprint

Decision-support tool for asset durability, incorporating environmental aspects

Module
Biodiversity Footprint

Module
Water footprint (ISO 14046)

Module
Asset Vulnerability

Module
Environmental standard indicators

Module
Carbon Footprint (ISO 14067)

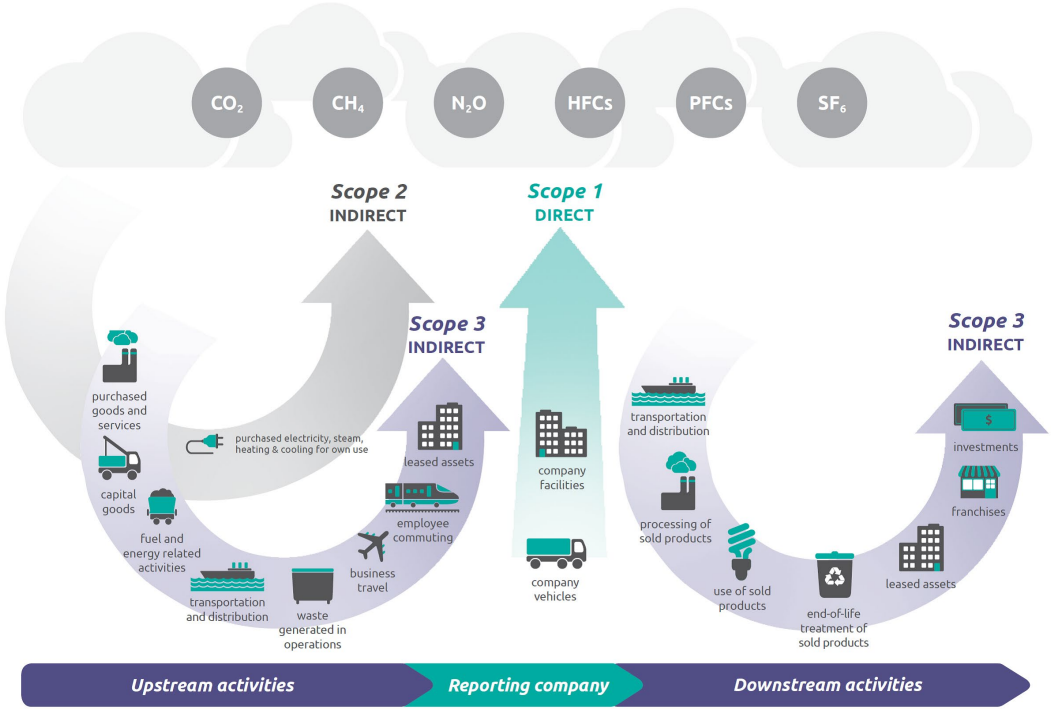
ESG Solution(s)

Social & Governance

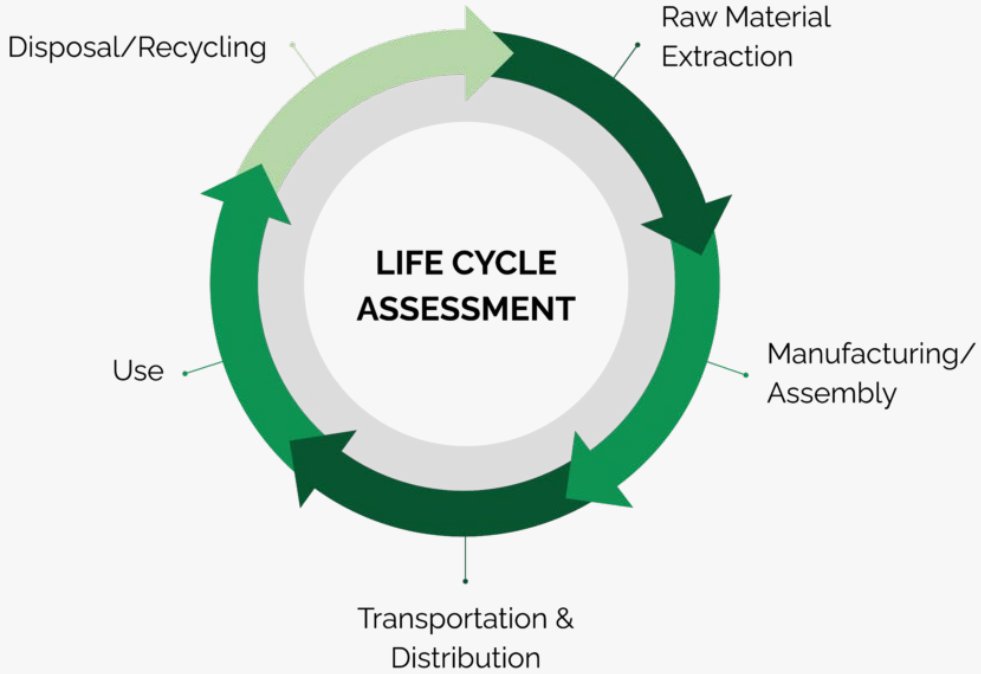
Stelar

Environment

GHG Quantification (ISO 14064)



Life Cycle Analysis (ISO 14040/44)



Stelar: Decision Support Tool

Example : Maintaining major road bridge until new construction (15 yrs)

Road Bridge (real case)

Manufacturing Date : 1940
End of Life Projected by Stelar : **2015**
Health Index: Critical

Scenario 1 : Replacement in 2040

Scenario 1: Concrete Screed Maintenance as usual
Replacement Cost : at least $12M
Carbon cost of replacement (scope 1) : 0.25Mt CO2 eq
Carbon cost of replacement (scope 2 & 3) : 2.4Mt CO2 eq
Health Index: Bad

Scenario 2: Replacement in 2040

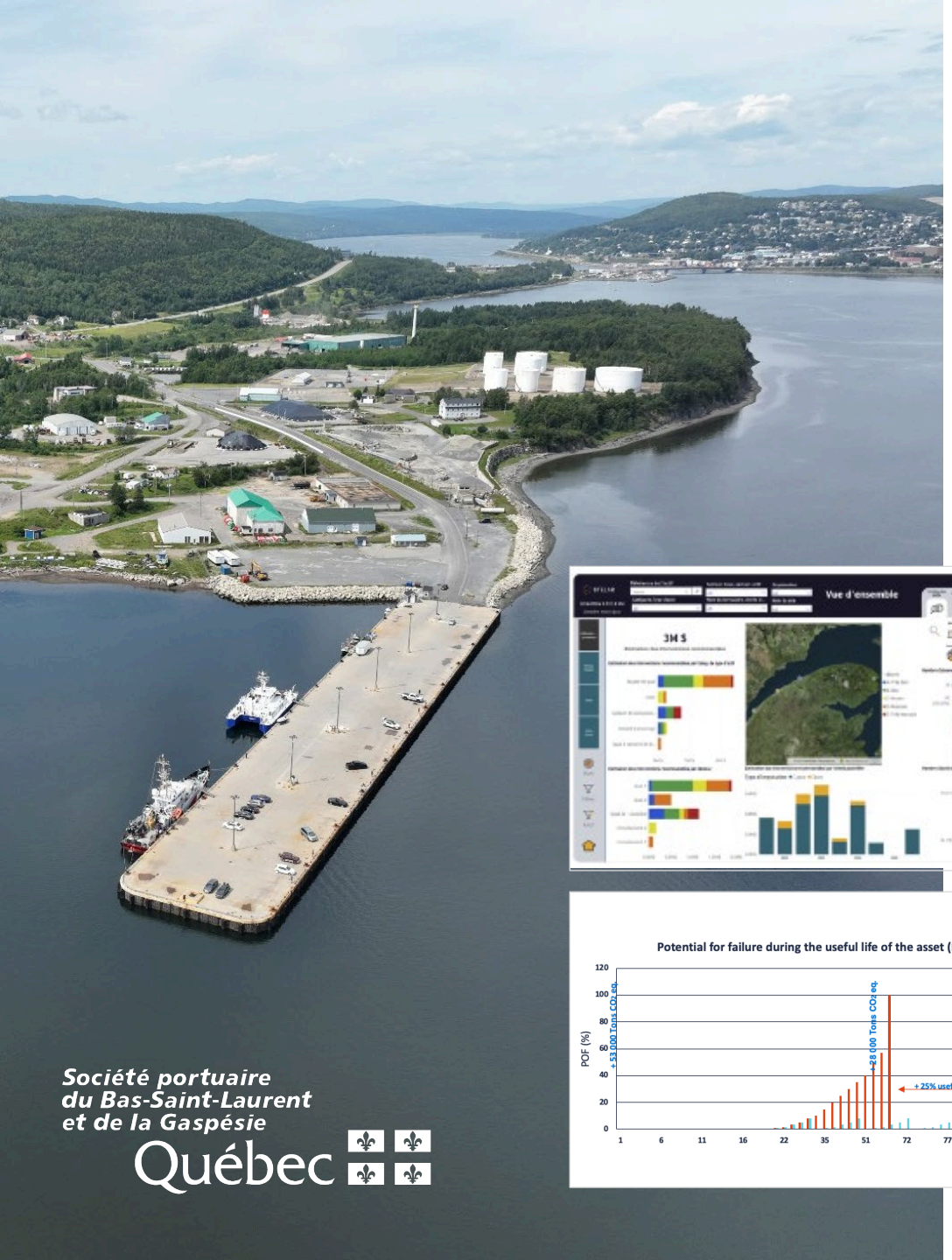
Scenario 2: Deck Replacement with Conventional Concrete
Replacement Cost : $19M
Carbon cost of replacement (scope 1) : 0.27Mt CO2 eq
Carbon cost of replacement (scope 2 & 3) : 1.2Mt CO2 eq
*Health Index: **Moderate***

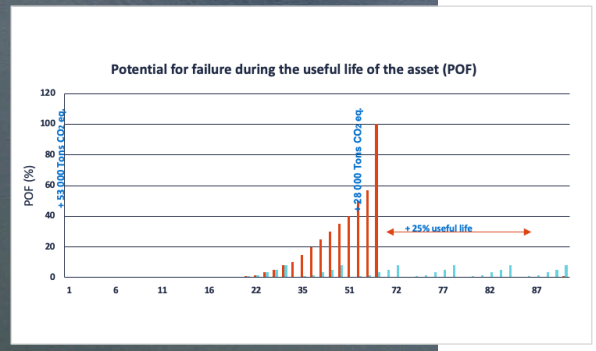
Scenario 3 : Replacement in 2040

Scenario 3: Deck Replacement with Ultra-High Performance Fibre-reinforced Concrete
Replacement Cost : $27M
Carbon cost of replacement : 0.45Mt CO2 eq
Carbon cost of replacement (scope 2 & 3) : 0.76Mt CO2 eq
*Health Index: **Moderate***

Optimal scenario using LCA methodology :
Economic aspect only : scenario 1

By integrating Carbon Footprint Module : scenario 2





SPBSG reduces its carbon footprint with Stelar

The Société portuaire du Bas-Saint-Laurent et de la Gaspésie implements Stelar to improve asset visibility, increase ports remaining useful life and reduce its carbon footprint.

Challenge

Management did not have visibility on the status of their port assets and the required investments in the coming years.

Solution

Stelar has been implemented to integrate inspection studies and plan capex investments accordingly while increasing asset durability and thus reducing carbon footprint.

Results

28,000t of carbon avoidance for one wharf only through extending the life of the port assets. 25% increase in the expected remaining useful life of one wharf!

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