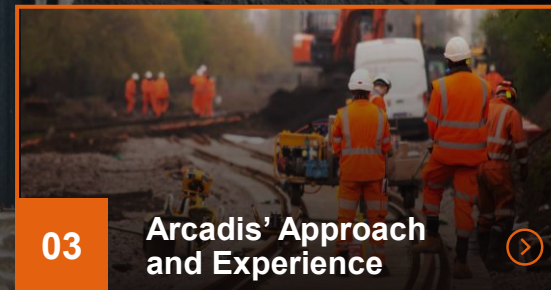


Climate Adaptation for Ports & Terminals:

A comprehensive, scalable approach, integrating best practices with local insights for high added-value & climate resilience efficiency for our clients



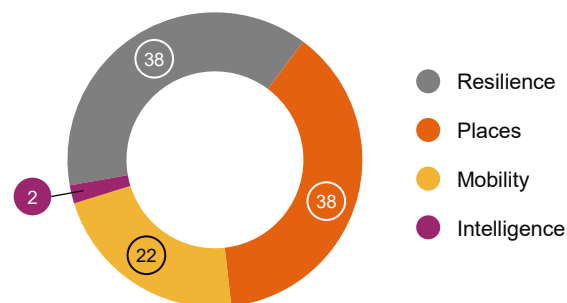
Agenda



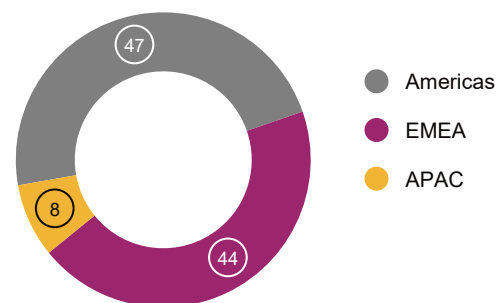
Arcadis: at a glance

With 36,000 people, operating in 30+ countries, Arcadis operates from a position of strength with well-established local expertise and services and global scale to meet client needs and ultimately improve quality of life for all.

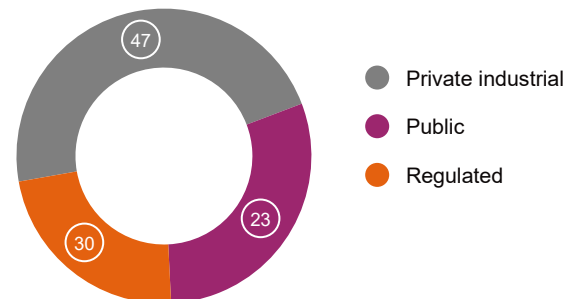
Global Business Areas (GBAs) in %



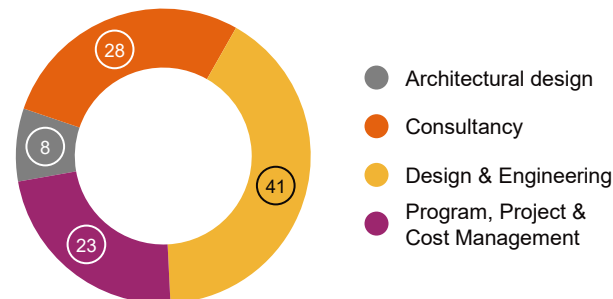
Geographical in %



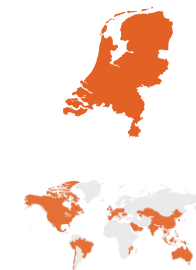
Clients in %



Services in %

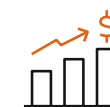


All percentages based on FY '24 net revenue



Founded in 1888
in the Netherlands

36,000 people
operating in 30+ countries



€5.0 billion
in gross revenues in 2024



Ranked top 2% in our industry in 2024
for ESG performance by Sustainalytics

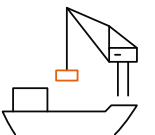
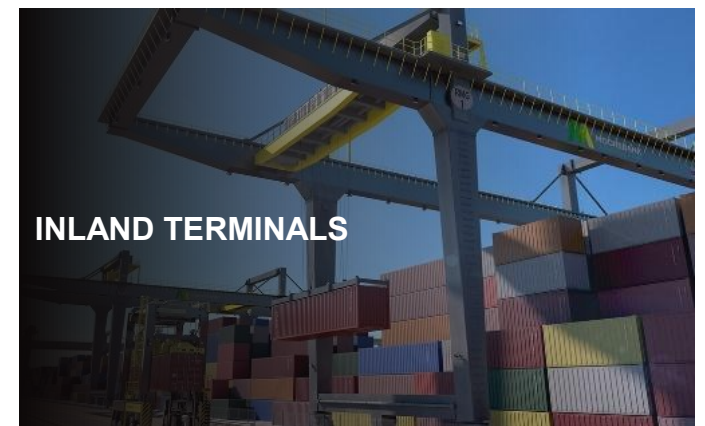
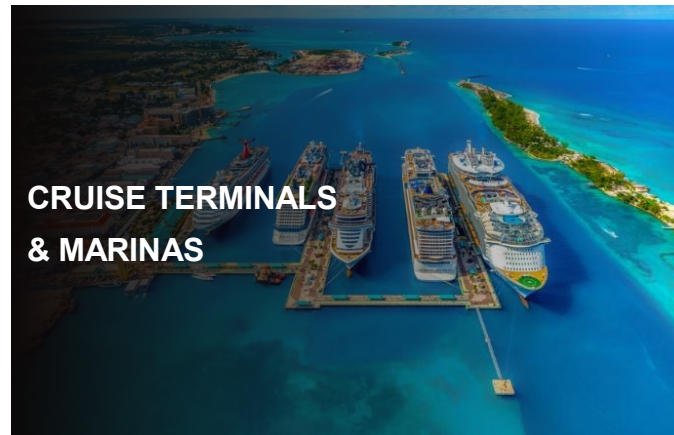
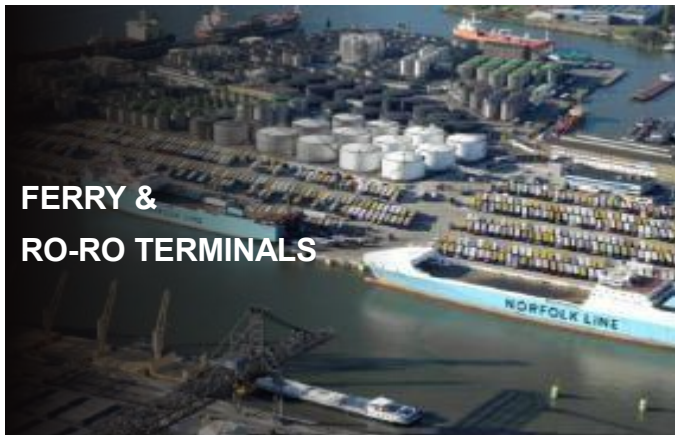
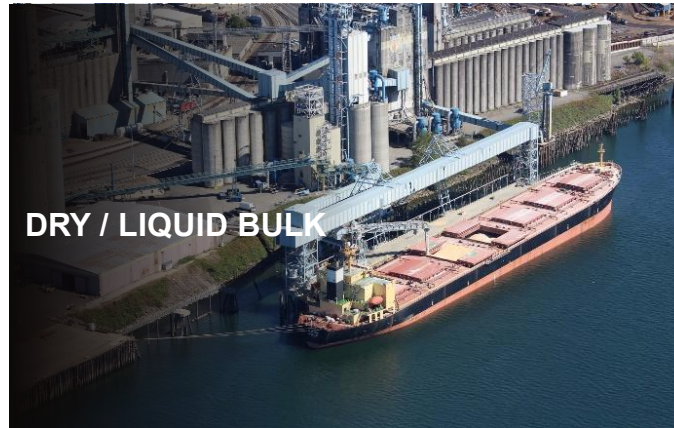
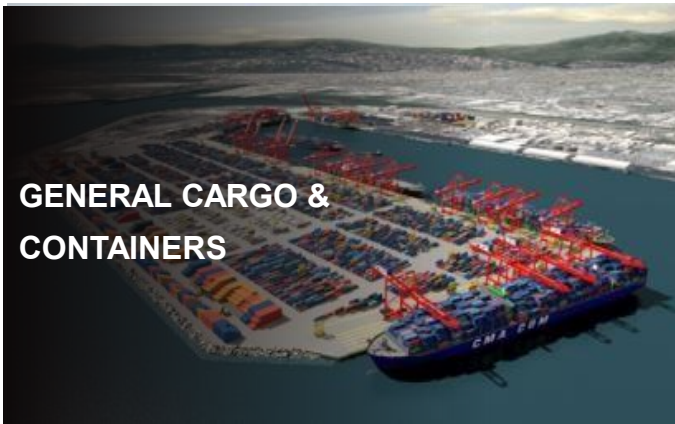


2nd largest
architecture firm in the world



Platinum rated by EcoVadis
for successfully integrating sustainability practices.

Ports and Terminals – Expertise Across All Asset Classes



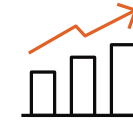
Ports and Terminals

Full Asset Life- cycle Support from Conception to Disposal



Planning & Design

- Terminal Demand & Traffic Analysis
- Competitive Analysis
- Maritime Planning
- Port Master Planning
- Concept & Detailed Design
- Transport & Access Linkages
- Dredging & Reclamation Analysis
- Hydraulic, Electrical & Fire Services
- Value Engineering



Investment Advisory

- Commercial & Technical Due Diligence
- Feasibility Studies
- Economic Studies & Market Assessments
- Investment Business Plans
- Post-transaction Advisory
- Expert Witness Advisory



Environmental

- Environmental Impact Assessment
- Sustainability Advisory
- Conservation Management Planning
- Habitat Surveys
- Hazard, Risk & H&S Management
- Waste & Contamination Management



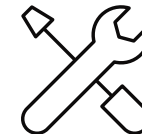
Supervision

- Project & Construction Management
- Project Costing & Planning
- Design & Contract Management
- Stakeholder Management
- Procurement
- Permitting & Licenses



Modeling & Investigations

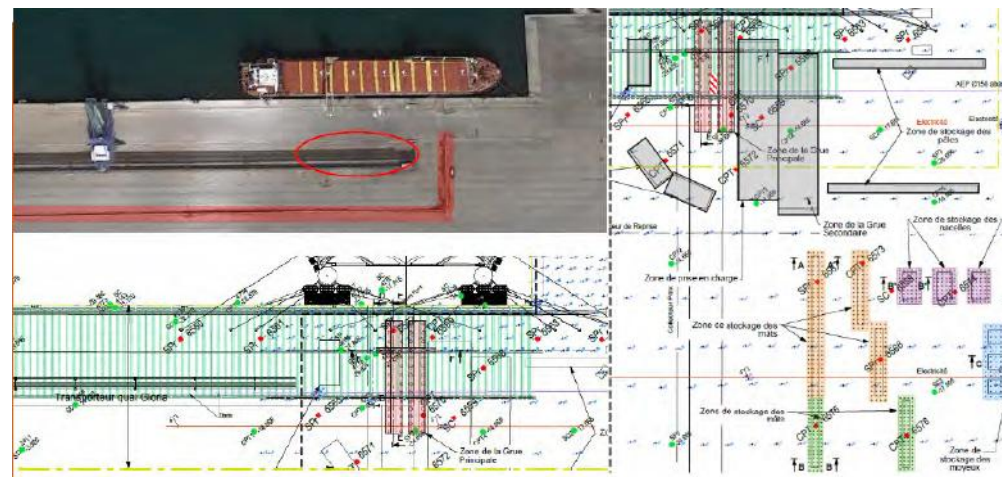
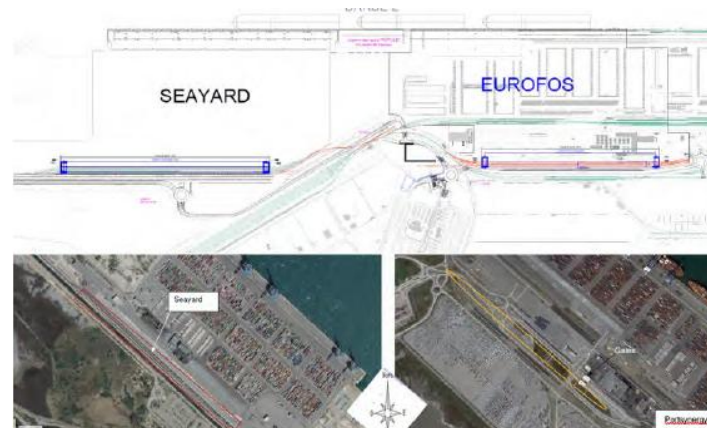
- Geotechnical Services
- Topography & Bathymetry
- Metocean & Coastal Engineering
- Numerical Modelling Studies
- Navigation & Mooring Studies
- Waves & Currents Studies
- Vessel Movements & Statistics



Asset Management

- Life Cycle Optimization
- Inspection & Maintenance Planning
- Performance Contracts
- GIS/data Management
- Supervision
- Structural Integrity & Life Extension

Some of our port related activities in the region



Market Context

Climate Risks are Closing In

The impact on port operations and infrastructure

	OPERATIONS	INFRASTRUCTURES
Heat waves 	• Limits on periods of construction activity.	• Thermal expansion of piers. • Deverment integrity and softening.
Rising sea levels 	• Frequent interruptions of coastal low-lying road and rail due to storm surges. • Flooding of terminal areas.	• More frequent flooding of infrastructure (and potential damage) in low lying areas. • Erosion of infrastructure support. • Changes in harbor facilities to accommodate higher tides and surges.
Intensity of precipitation 	• Increase in weather related delays and disruptions.	
Increasing hurricane intensity 	• Topple of container stacks and port equipment. • Debris on port infrastructure.	• Greater probability of infrastructure failure. • Greater damage to port infrastructures.
Increase in Arctic temperatures 	• Longer shipping season. • More ice-free ports in northern regions. • Availability of trans-arctic shipping routes.	• Damage to infrastructure because of the thawing of the permafrost.



Different Risks, Shared Exposure

Climate Hazards Impact All Ports & Terminals since 2022 - In Different Ways

UK

Holyhead Port Wales: 2025 Storm Darragh-damaged the port and resulted in a shut down for 1 month hampering ferry operations between the UK and Ireland

Canada

On the east coast, Canada's Port of Halifax is seeing significant vessel delays due to harsh North Atlantic weather conditions. Compounding this issue is an exceptionally high rail dwell time, averaging 18 days.

USA

The Port of New Orleans experienced a temporary closure in January 2025 due to a significant winter storm. Operations were suspended for several days

Brazil

In January 2024, floods in southern Brazil submerged major ports, terminals and freight tracks, disrupting cargo services.

Netherlands

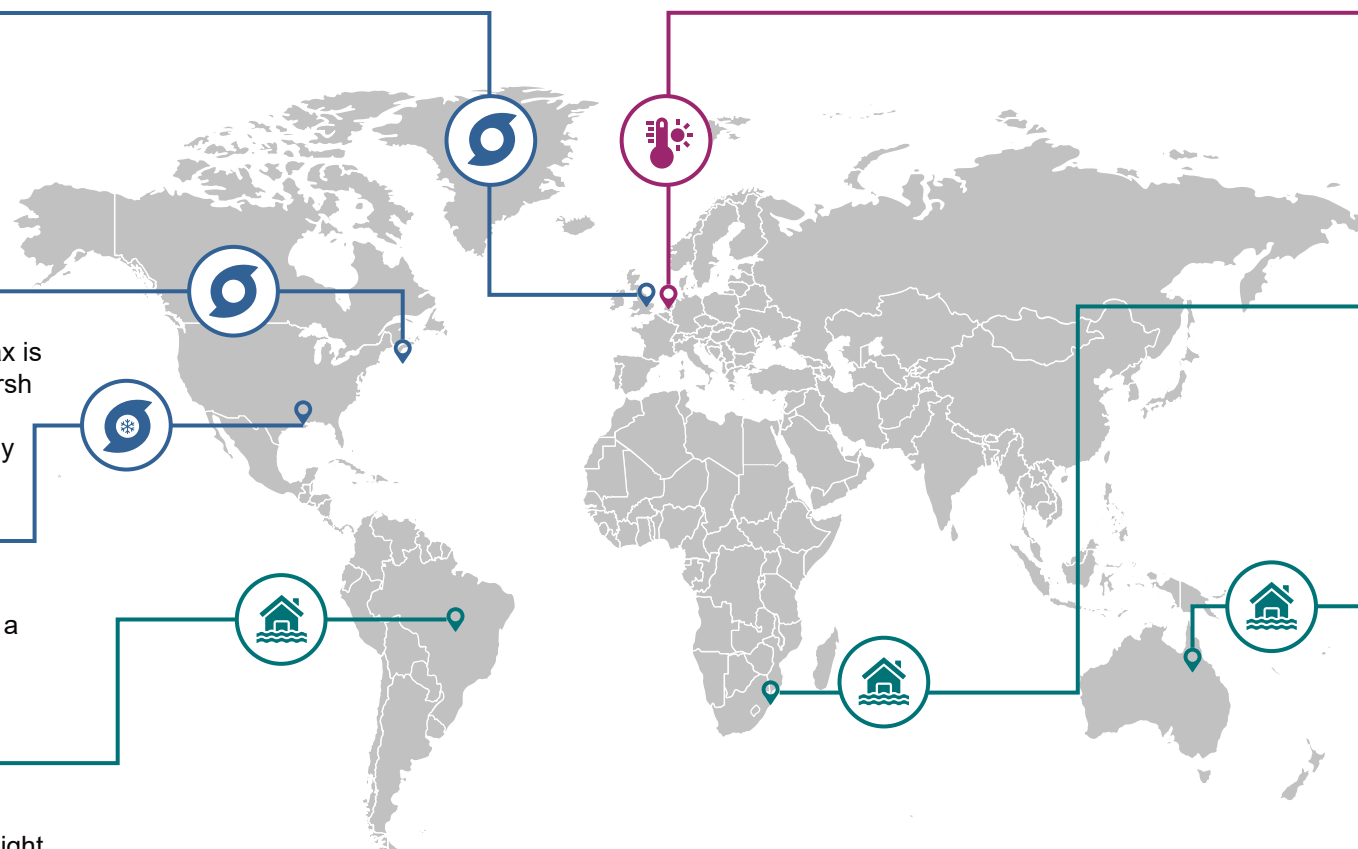
Heatwave affects operations at Rotterdam in 2025. Exceptionally high temperatures caused significant disruption at the Port of Rotterdam this week, affecting crane operations, rail freight transport, and logistics in the hinterland.

South Africa

In April 2022, days of heavy rain across KwaZulu-Natal in southeastern South Africa led to deadly floods. Particularly hard-hit were areas in and around Durban. The port closed and endured heavy damage to equipment and cargoes.

Australia

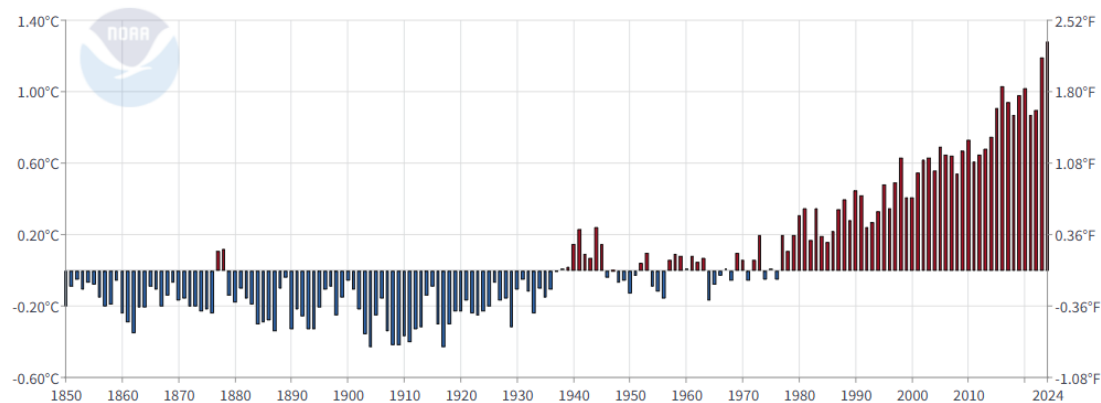
Port Hedland, the home of the world's largest bulk export port by tonnage was closed several days in 2025 due to Cyclone Zelia with hinterland rail activities heavily effected



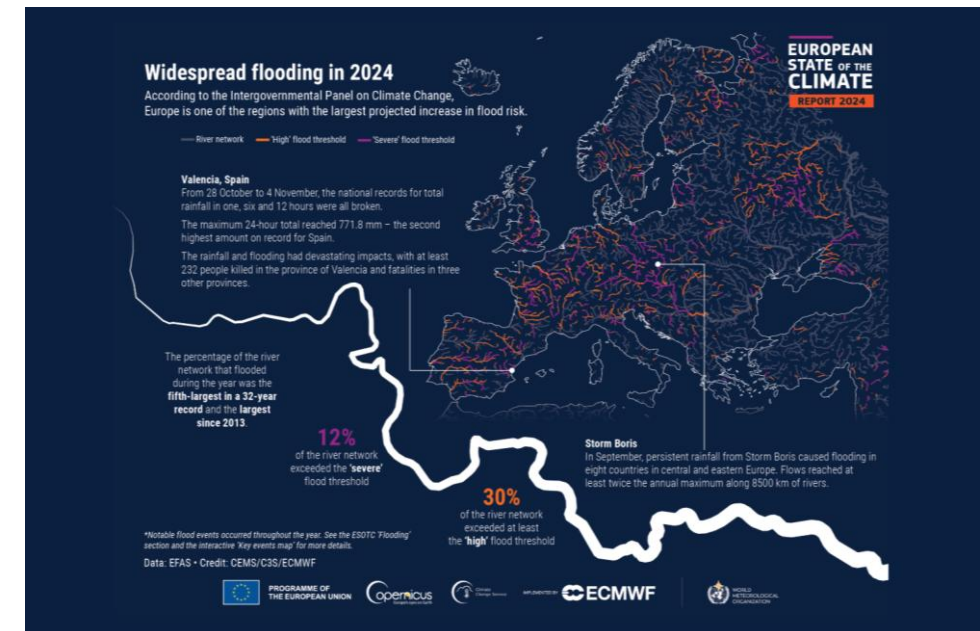
Extreme Weather Events Increase as Climate Change Accelerates

“...it is estimated that exposing the EU economy to global warming of 3°C above pre-industrial levels could result in an annual loss of at least EUR 170 billion” EIB Climate Adaptation Plan

Global Land and Ocean Average Temperature Anomalies



European State of the Climate 2024 | Copernicus



Link: [Climate-Risks-in-the-Transportation-Sector-1.pdf](#)

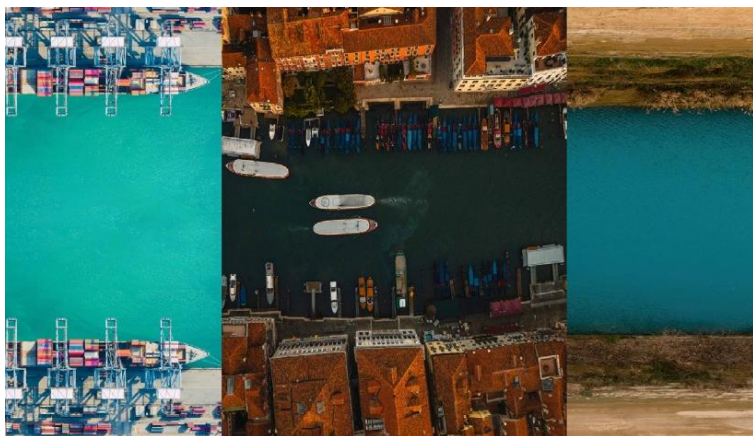
Source: NOAA

© Arcadis 2025

Link: <https://climate.copernicus.eu/esotc/2024>

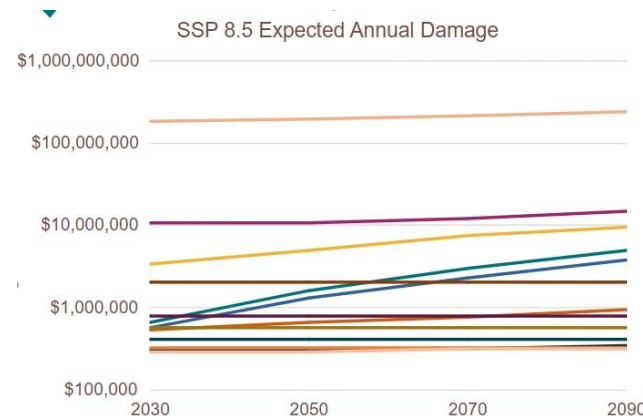
Increased Financial Impact of Natural Disasters

Global investment requirement of USD 768 billion for SLR alone.



JP Morgan Study

- Sea Change: Port infrastructure, climate risks and the future of global trade
- Present-day annual expected median value-at-risk estimated around **\$7.6 billion** a year
- Estimates suggest a global requirement of **\$223 billion to \$768 billion by 2050** for sea-level rise



Arcadis Internal Australia assessment

- Australian ports: Expected annual impact of over A\$260m for 2090 under a high emissions scenario.
- Significant uptick in impact at NT Ports due to elevated long term inundation risk exposure
- Mandatory reporting demands quantification– most larger ports will be subject to strict disclosure requirements from 2027

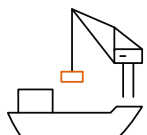


Shifting Risk Perception Among Citizens, Investors and Regulators

- **Investors focus:** Climate resilience, ESG criteria, stabilization of revenues, risk mitigation.
- **Regulators demand:** Climate adaptation for rail networks.
- **Users:** Increased apprehension due to risk of injury or being stranded or increasing time and cost on rail transport

Opportunities for Enhanced Readiness

Some progress has been made on disaster response mechanisms; however, a comprehensive risk-weighted and cost-effective climate mitigation plan is needed across the industry



Lagging Infrastructure Adaptation

- **Many ports and terminals:** Legacy systems, not extreme weather ready.
- **Slow progress:** Climate-resilient tech and materials adoption, adaptation of construction standards and design relies on outdated climate risk thresholds



Fragmented Strategies Across Regions

- **North America focus:** Disaster response, not proactive adaptation.
- **European focus:** Varied adaptation and localized risks leaving specific regions more vulnerable



Industry Trends

- Increasing use: Predictive weather analytics, IoT sensors, digital twins.
- Growing interest: Public/private climate-resilient project funding.
- Investment protection in infrastructure increasingly a focus



ADAPT OR SUFFER: Why ports and terminals **MUST** Act Now

Adaptation is not optional — it's urgent.

International Association for Ports & Harbours

RISK AND RESILIENCE IN CONTEXT

By Niels Vanlaer, BCM & Harbour Master, Port of Antwerp-Bruges, with inputs from Shri Madiwal, Harbour Master, Vancouver Fraser Port Authority and Ingrid Boque, Global Strategic Networks Officer, Hamburg Port Authority.

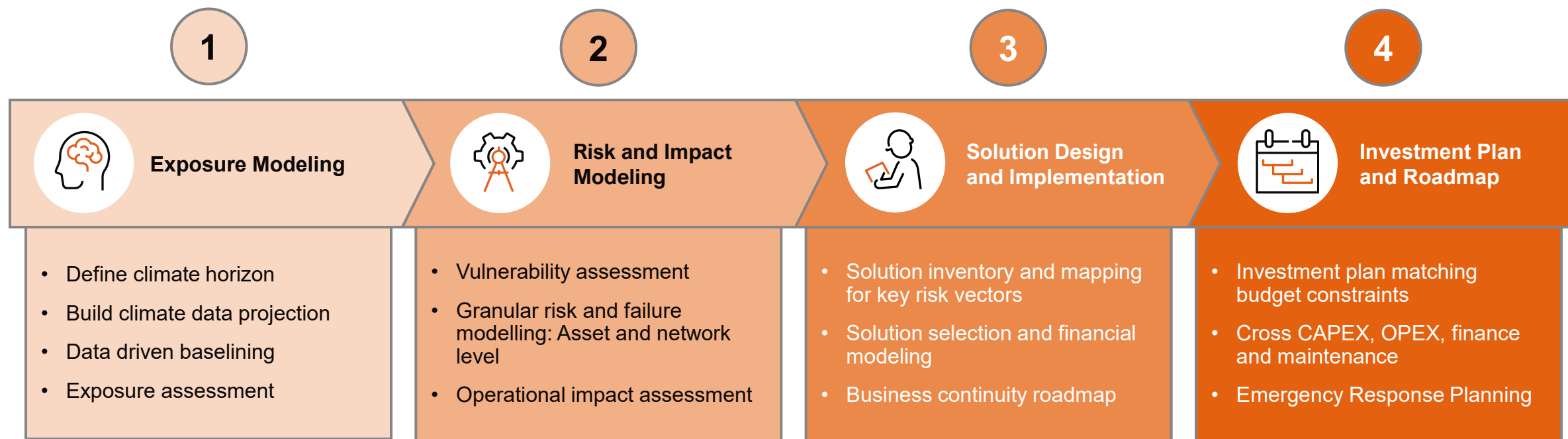


Ports have always played a critical role. Their unique position and their vital role in the support of a nation's economic activity reaches well beyond their critical role as the nodal link between the maritime and intermodal supply chains. At the same time, they can be very vulnerable to all kinds of risks and changes: internal, external and environmental. Therefore, the need to have efficient and resilient ports is of paramount importance.

Arcadis' Approach and Experience

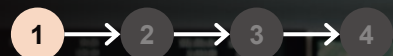
Climate Adaptation Solution Overview

Systematic methodology to assess, manage and implement future focused climate resilience for ports and terminals



In global: Tailor-made solutions with clear and intuitive dashboard designed for our clients to help apprehend easily climate risk adaptation and integrate it in their risk policy, all based on dynamic data base

A four-step roadmap view adaptable to each of our client's level of advancement and priorities



Exposure Modeling

- Define climate horizon
- Build climate data projection
- Data-driven baselining
- Exposure assessment

#	Need	Step	Output / Product	Input Data Needed	Technology Support
A	Which climate horizon should I set for our port or terminal?	Define climate horizon (optimistic or pessimistic scenario) on various time scales covering short term (2030), mid-term (2050, 2070), and long term (2100).	Baseline climate scenario(s) assumption and probability of evolution from today until 2100.	Client's risk profile, IPCC	Jupiter
B	How can I obtain reliable scaled-up climate data adapted to our location?	Collect and develop climate projection data to identify and prioritize climate hazards specific to the network's scale and location.	Probability of hazard occurrence and intensity (e.g., degree of heat wave, depth of flooding) with up to 90m accuracy worldwide.	IPCC, local measures	Jupiter
C	What is our level of exposure to climate change?	Define climate indicators for each hazard that align with asset and operational thresholds (e.g., more than 15 mm of rain affecting operations).	Climate exposure stress tests showing exposure levels (low to high) across time scales and indicators per hazard.	Step A & B outputs	Nexus Climate Risk



TCFD Gap Analysis

Freightliner

Project Background

Freightliner UK, an established rail freight provider offering a wide range of rail freight solutions, will begin to disclose climate and sustainability-related financial information according to the Task Force for Climate Related Disclosures (TCFD) beginning in 2023. They have appointed Arcadis to help to be able to meet their goal to disclose.

Arcadis's activities involved conducting a gap analysis to assess how well Freightliner UK aligns with TCFD requirements. This included carrying out a benchmarking exercise by reviewing available information on selected competitors and industry-leading organizations regarding their disclosure approaches, which would inform the development of our recommendations. Additionally, Arcadis aimed to determine the necessary actions to support an iterative approach in developing a robust framework for TCFD disclosure.

The project's key challenges included managing the timeframes for disclosure and addressing the client's maturity level in relation to TCFD given their limited existing structure to support disclosure. On the other hand, the client benefits include gaining a more comprehensive understanding of their performance in climate-related risk reporting and disclosure compared to competitors. The recommendations will provide Freightliner with the necessary information to submit their first TCFD disclosure within their desired timeframe. Furthermore, alignment with TCFD will enhance the company's understanding of its own risks, allowing these insights to be incorporated into their strategic processes.

Climate Adaptation X Mobility

The Freightliner UK TCFD disclosure project allowed the client to improve their operations from both a climate mitigation and adaptation side. Freightliner successfully aligned with the TCFD to disclose climate-related risks to their assets and reported how future hazards will hurt performance. The project allows the company to integrate adaptation into their daily operations by improving the efficiency of risk analysis.



Client
Freightliner UK

Location
United Kingdom

Period
2022 - 2023

1

2

3

4

Climate Exposure Assessment

Example North Sea Port Flushing

Objective

Identify climate exposition on the Dutch port of Flushing.

Innovation

A mapping interface on the client's site for direct visualization of port and terminals exposure and stress test analyses conducted across the entire network with possibility to vary instantaneously scale and type of hazard

Potential Results

Improved management and anticipation of climate hazards impacts for a vital port infrastructure



The logo for ARCADIS, featuring a stylized orange 'A' followed by the word 'ARCADIS' in a bold, sans-serif font.





Risk and Impact Modeling

- Vulnerability assessment
- Granular risk and failure modelling: Asset and network level
- Operational impact assessment

#	Need	Step	Output / Product	Input Data Needed	Technology Support
A	What is the risk of failure of our assets during a climate hazard?	Assess the potential physical impact on infrastructure and analyze damage progression / evolution based on hazard intensity.	Climate vulnerability assessment for individual infrastructure assets or groups.	Output from previous steps (exposure modeling)	Nexus
B	What is the risk of disruption of our network?	Combine physical impact with operational effects to evaluate the tipping point where assets or asset groups become non-functional, and estimate repair timelines	Operational risk assessment for each hazard.	Repair and work delay data, output from Step A	GIS, PowerBI, Nexus dashboard
C	What is the operational impact of these failures/disruptions on our level of service?	Integrate operational risk assessment with the criticality of affected itineraries or network sections (considering geography, traffic, etc.)	Quantified impact assessment expressed in passenger-minutes/train-minutesGIS network and impact evaluation.	Output from Step B	TrainSim / Xandra

Development of innovative tools to shape the future of risk for the Port Authority

Port Authority of New York and New Jersey

Arcadis has supported a broad scope of work focused on the Port Authority's climate-based objectives, including reviewing best available climate science, analysing future climate risks, creating tools to examine vulnerabilities, developing design guidelines, and advancing natural infrastructure projects. Arcadis is the Program Manager for PANYNJ's Agency-Wide Climate Risk Assessment (CRA), an analysis of climate-related risks across all Port Authority facilities to identify at-risk critical assets, direct and indirect consequences of inaction, strategic investment priorities, and measures to mitigate risk. The CRA serves as the basis for additional, aggressive resilience action by the Port Authority.

In addition, Arcadis has been developing a decision support tool referred to as the Digital Assessment Platform (DAP). The DAP helps to visualize assets and systems for each facility and can integrate a broad range of hazard data to assess specific asset vulnerabilities and identify consequences. The tool can also optimize the selection of adaptation solutions to reduce climate risk and can be used to summarize the results of the CRA and inform the capital planning process for PA.



Client

Port Authority of New York and New Jersey (PANYNJ)

Location

New York Metro Area, USA

Period

2020 - Ongoing



Sea Level Rise



Storm Surge



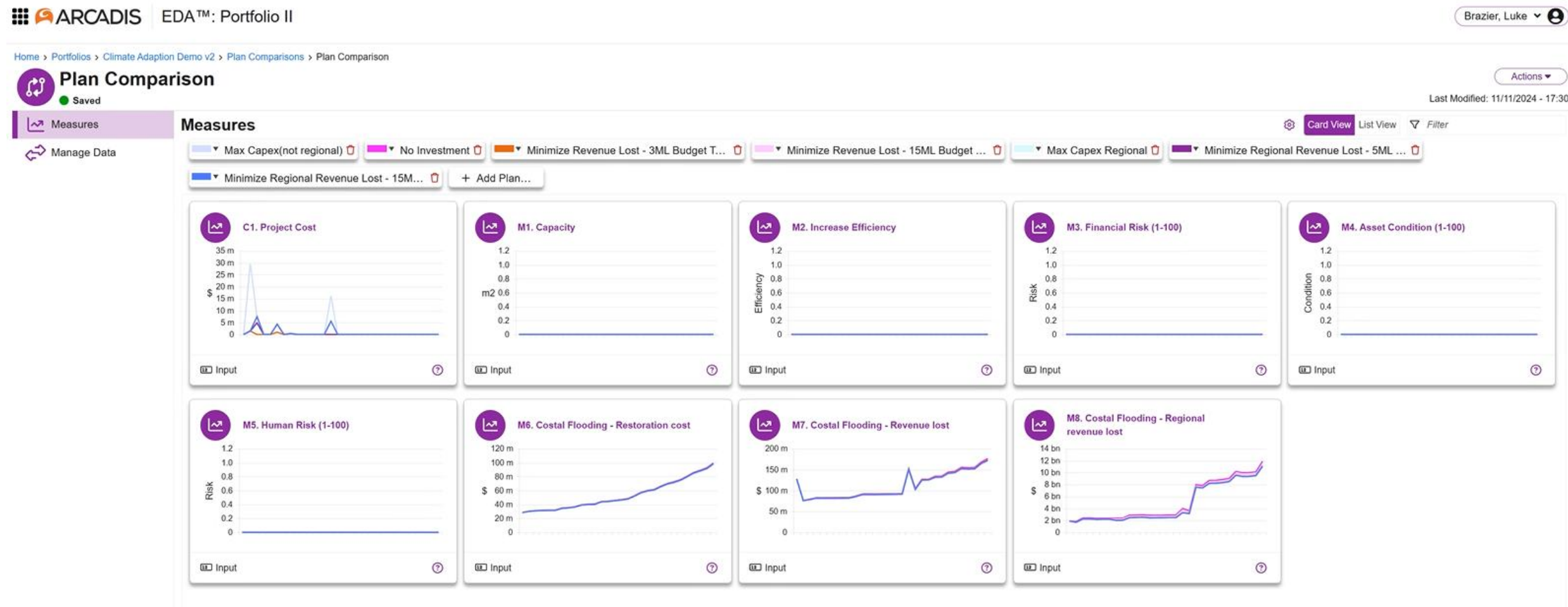
Extreme Rainfall



Extreme Heat

Development of innovative tools to shape the future of risk for the Port Authority

Port Authority of New York and New Jersey



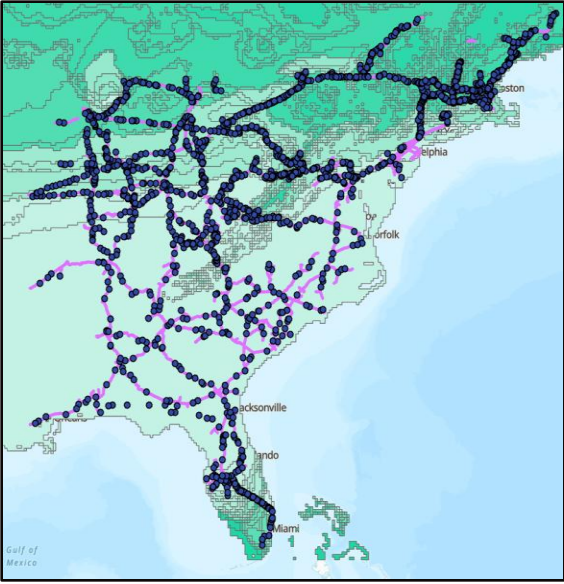
Climate vulnerability assessment

CSX Network (USA)

1,800 climate extraction points were used to create a climate grid that best corresponds to the assets of CSX's railway network.

Each asset is linked to interpolated climate data.

Approximately 200 points are then used to further refine the analysis of the most impacted assets.



CSX: 32,000 km of networks from Florida to Canada (26 states crossed)

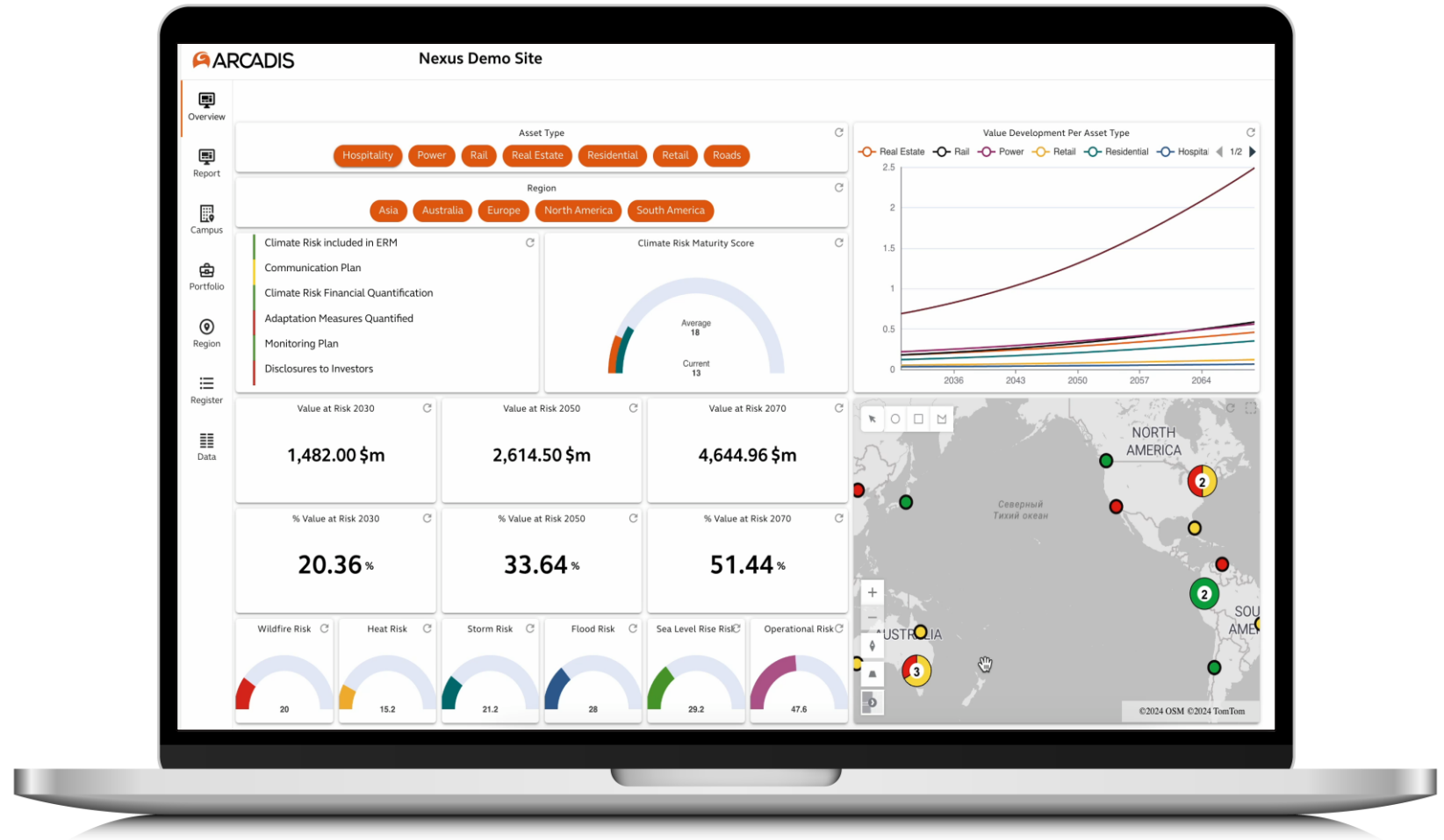
	Flood Risk	Extreme Heat	Extreme Precipitation Events	Wildfire	Drought	Sea Level Rise
Impact Description	Increase in inundation risk from sea level rise (SLR) and/or storm surge	A long period (2 to 3 days) of high heat and humidity with temperatures above 90 degrees	Sudden overflow of inland water or rapid accumulation of surface water	Increase in wildfire risk due to changes in temperature and precipitation.	Decrease in available water due to prolonged period of regional below-average precipitation.	Sea level rise refers to the gradual increase in the average level of the ocean's surface over time.
Impact Metrics	Coastal and riverine; present-day and future storm surge (future to include rate of sea level rise over time)	Annual Temperature and Days Over 32 °C or 90°F Increase in the amount of cooling degree days (CDD) indicating the need for air conditioning.	Number of monthly precipitation events greater than a 10-year and 100-year recurrence interval (RI)	Average annual number of extreme fire risk days as defined by the Keetch-Byram Drought Index (KBDI).	Average annual drought months from Standardized Precipitation Evapotranspiration Index (SPEI)	Rate of sea level rise, annually in millimeters.
Financial Impacts	- Partial or full Loss of Asset - Business disruption - Proactive versus reactive costs - Increased insurance costs - Decline in property values	- Business disruption - Increased cooling requirements for an individual facility - Increased operating costs	- Partial or full Loss of Asset - Business disruption - Proactive versus reactive costs	- Partial or full Loss of Asset - Business disruption, including supply chain impacts	- Business disruption - Increased operating costs for water usage (data centers are water intensive) - Potential for structural concerns to assets	- Property damage and/or losses - Adaptation costs and infrastructure maintenance - Insurance costs - Business loss or loss of revenue

Work with operators to determine the target service levels across all climate scenarios.

Climate vulnerability assessment

CSX Network (USA)

- Development of a digital twin capable of integrating a large portfolio of assets.
- Visualization of climate risks, financial implications, and recommended adaptation measures.
- Hierarchical synthesis of risks to drive concrete strategies that improve the resilience of operations and transportation network management.
- Planning and monitoring tool for climate resilience actions.



Fine-grained and dynamic analysis of complex assets



Risk quantification

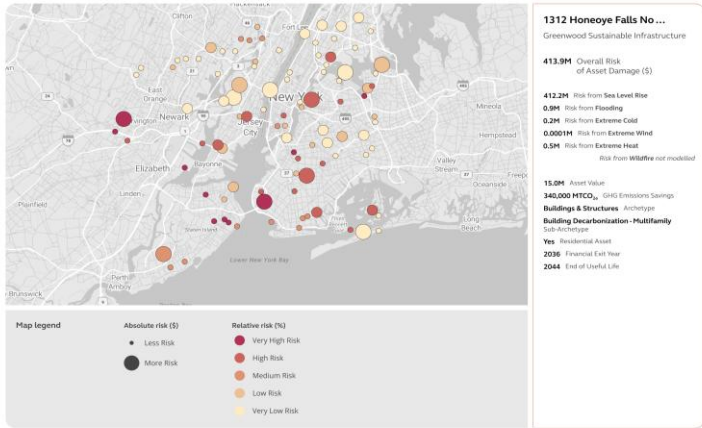
Quantified Risk for All Asset Types and All Hazards

(i) This page is showing insights for all countries and active assets analyzed for asset value at risk and modelled using Scenario SSP5-8.5 in 2070

Key Metrics

39 Assets
5 Countries
\$82.4K Direct Loss Risk
\$121.8K Downtime Loss Risk
\$204.2K Total Loss Risk (Direct + Downtime)

Where is My Asset Risk?



Which Asset Types are Most at Risk?

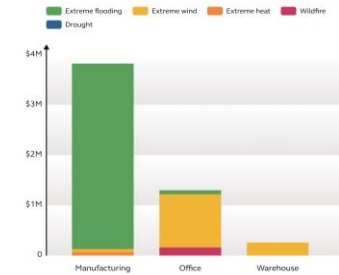


Chart insights
\$5.38M aggregate asset value at risk for all active assets and all hazards under Scenario SSP5-8.5 in 2070

Which Hazards contribute Most of the Risk?

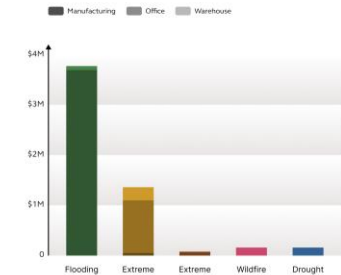


Chart insights
In 2070, the largest asset type at risk is Commercial Office with \$3.82M of asset value at risk.
The greatest hazard for Commercial Office would be Extreme Flooding which comprises \$3.69M of asset damage risk.

Asset Details

Address	Property Value (\$)	Building Use	Building size (SQFT)	Flood AAL (\$)	Wildfire AAL (\$)	Heat AAL (\$)	Extreme Wind AAL (\$)	Total AAL (\$)	Loss (%)
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Risk exposure

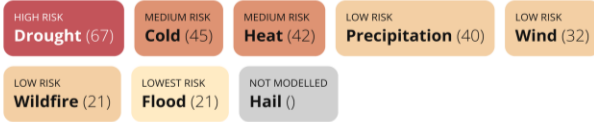
Risk Exposure for All Asset Types

(i) This page is showing insights for All Countries and All Business Units

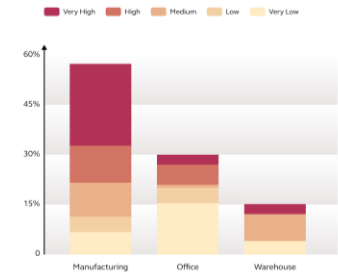
Key Metrics

8 Hazards
16 Metrics
Low Risk (34)
Overall Asset Exposure Risk

Portfolio Exposure by Hazard



Which Asset Types are Most at Risk?



Which Hazards contribute Most of the Risk?

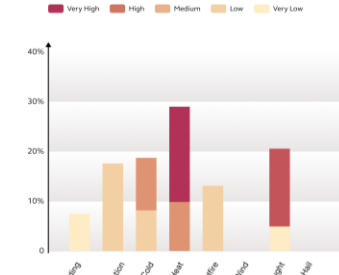


Chart insights

Overall, manufacturing assets attract most asset risk with 58%.
Office assets attract proportionally the least amount of high-risk hazards with 2/3 of all office-related hazard risk to be low or very low risk.
The largest exposure to very high hazard risk is concentrated in Manufacturing assets with 26%.
Heat contributes most of the very high hazard risk across all assets with 19%.
Wind (no risk) and Flooding (very low risk) are the hazards' least contributing to the overall hazard risk across all assets.
Drought contributes most of the high hazard risk across all assets with 15%.
*Hail risk was not modelled

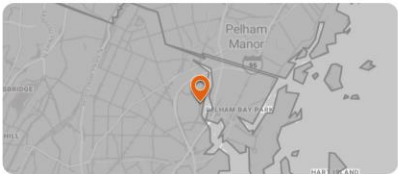
Asset Level Exposure

Asset	Flooding	Precipita...	Cold	Heat	Wildfire	Wind	Drought	Hail	Overall
Name	34.5	12.0	0	0	23.1	28.5	1.4	0	18.6
Name	28.1	17.4	4.1	32	32.2	14.9	8.3	6.3	27.2
Name	15.0	20.5	2.3	14	18.9	22.1	3.6	5.3	12.0
Name	22.8	31.2	3.1	81	29.4	17.3	2.5	38.6	15.4
Name	36.6	10.8	0.7	64	27.0	19.8	1.0	0	20.2
Name	29.4	56.3	5.5	15	31.5	16.4	9.0	45.9	24.8
Name	40.1	44.7	3.9	4	26.7	15.1	10.2	50.0	26.5
Name	33.3	211	4.0	41	20.9	20.0	6.7	20.0	14.6
Name	25.9	30.9	2.4	34	34.3	25.4	7.3	39.2	13.8
Name	19.2	12.5	1.1	17	22.8	16.4	4.0	0	17.1

Cross-Scaling

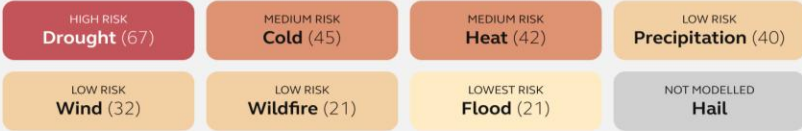
924 West McGregor Court NxEdge

Total Value \$81,793,917
Direct Value \$62,908,917
Downtime Value \$18,885,000
Archetype Manufacturing
Residential Asset Yes
Financial Exit Year 2036
End of Useful Life 2044



Exposure / Current Risk Levels

Risk Level from Hazard Exposure (in 2020)



EXPOSURE INSIGHTS

<Total Asset Damage Risk>
<Relative Asset Damage Risk>
<Largest Hazard Risk causing Asset Damage>
<Total Operational Damage Risk>
<Relative Operational Damage Risk>
<Largest Hazard Risk causing Operational Damage>

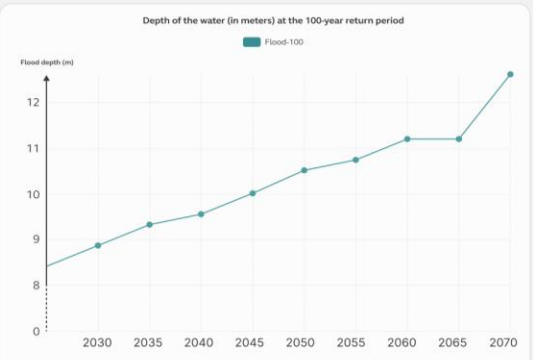
Exposure / Metrics Over Time



Flood-100
Depth of the water (in meters) at the 100-year return period

Flood-500
Depth of the water (in meters) at the 500-year return period

Sea Level Rise
Annual depth of the water (in meters) in coastal areas due to high tides





Solution Design and Implementation

- Solution inventory and mapping for key risk vectors
- Solution selection and financial modeling
- Business continuity roadmap

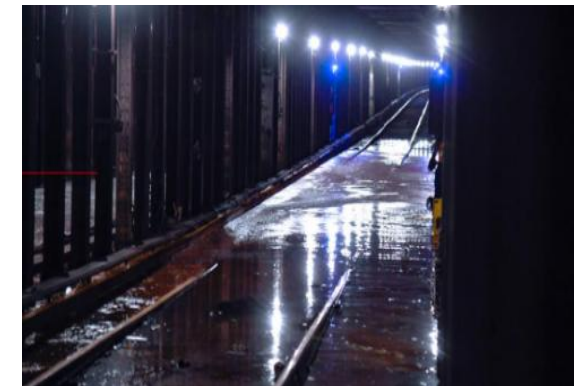
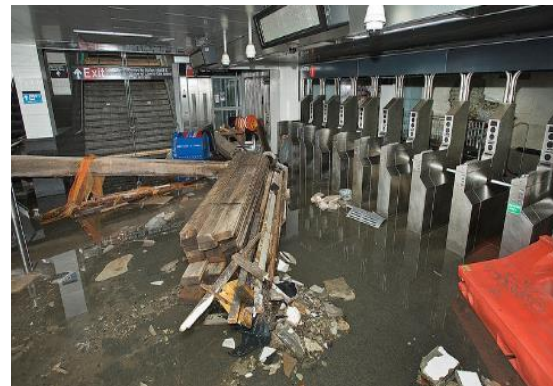
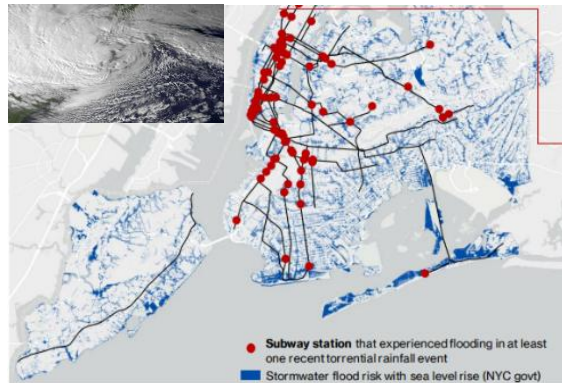
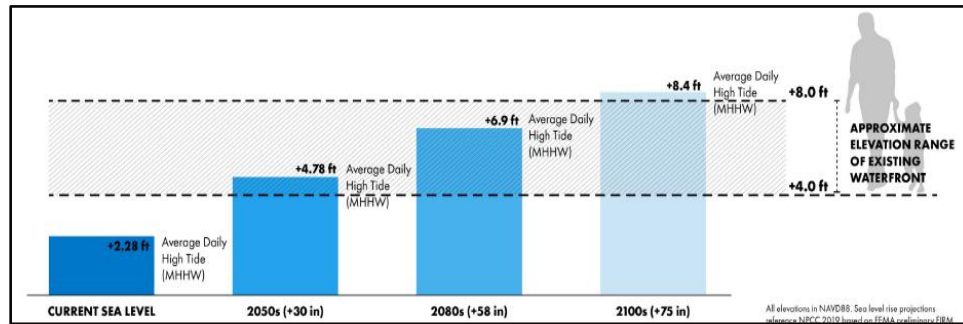
#	Need	Step	Output / Product	Input Data Needed	Technology Support
A	What are the existing solutions to limit/solve these impacts ?	Dress list of technical and operational solutions to avoid, mitigate and repair asset/group of asset to minimize impact of hazards	Catalogue/tool-box of solutions of all applicable scenarios with corresponding impact on level of service	Output from previous step	D&E
B	What are the financial consequences ?	Estimate cost of solutions listed previously and cross it with revenue losses, penalties, reputational damage, decrease of traffic and else	Global risk cost (CAPEX and OPEX) per solution compared to baseline (actual situation with no mitigation on climate risk)	Output from step A	Nexus
C	What level of service can I obtain/guarantee during a climate hazard ?	Benchmark combined solutions on asset/group of assets with projected level of service obtained during hazard occurrences	Traffic projections per group of solutions	Output from step B	EDA

Adapting an urban transport network to hurricanes and floods

New York MTA Network Climate Resilience Plan

Objective

Restore New York City's subway system to pre-Sandy conditions (2012) and protect it from similar storms in the future



Adapting an urban transport network to hurricanes and floods

New York MTA Network Climate Resilience Plan

Innovation

Protection of metro lines with multiple protective barriers at key points.

Results

Flood-resistant design for metro stations, tunnels and bus depots



14 Subway fan plants reinforced	127 Subway hatches installed	499 Subway manholes lined
111 Subway stairways protected	2200 Coastal mechanical closure devices installed	5 Bus depots hardened
4 Vehicular tunnel flood doors installed	100 Railroad equipment platforms elevated	6 Railroad substations raised



Resilient Rail Network



**Exposure
Modeling**



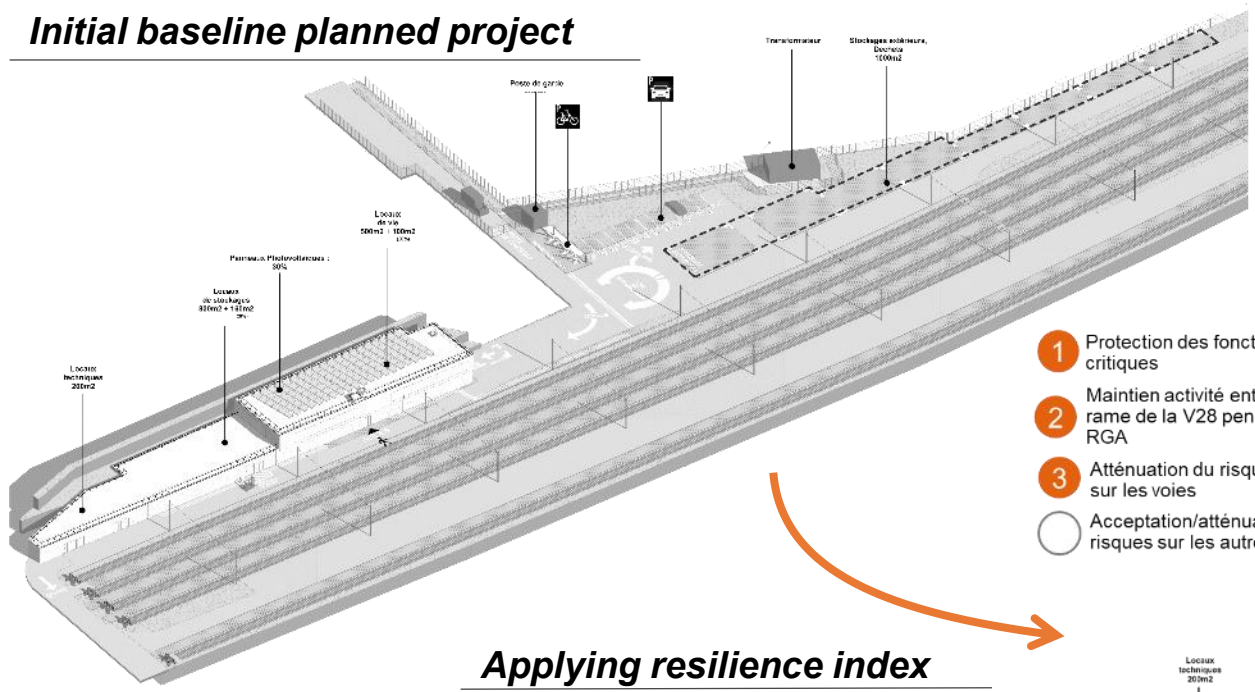
**Risk & Impact
Modeling**



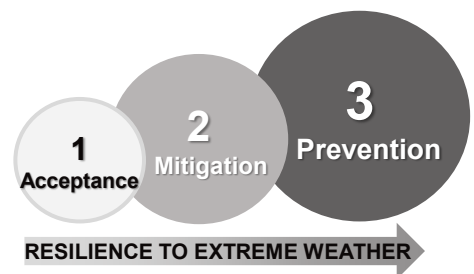
**Solution
Design
& Implement**

D&E of a new Rail depot in France for SNCF

Initial baseline planned project

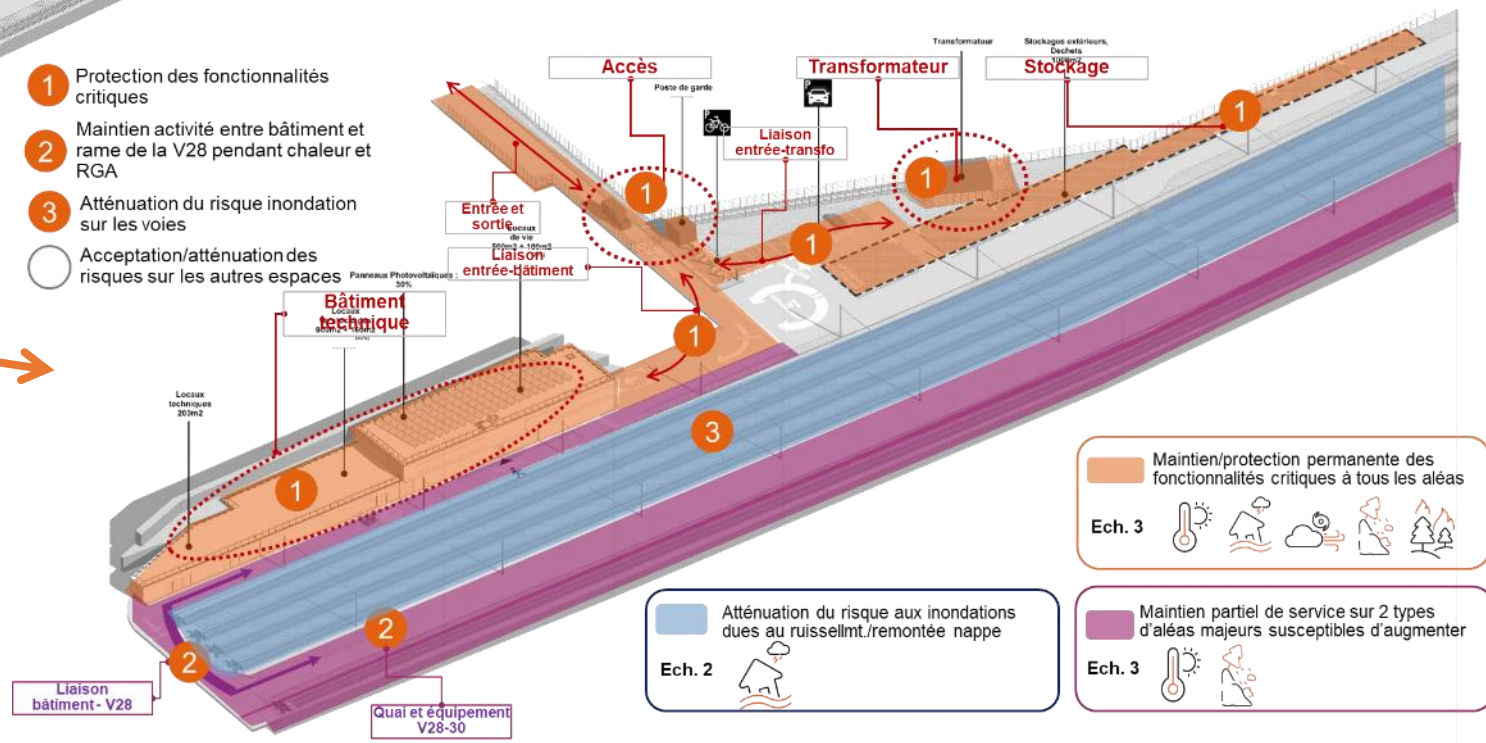


Applying resilience index



- 1** Protection des fonctionnalités critiques
- 2** Maintien activité entre bâtiment et rame de la V28 pendant chaleur et RGA
- 3** Atténuation du risque inondation sur les voies
- Acceptation/atténuation des risques sur les autres espaces

Zoning by resilience priorities



```

graph LR
    1((1)) --> 2((2))
    2 --> 3((3))
    3 --> 4((4))
    style 3 fill:#f96
  
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Improving standards with targeted & adapted solutions



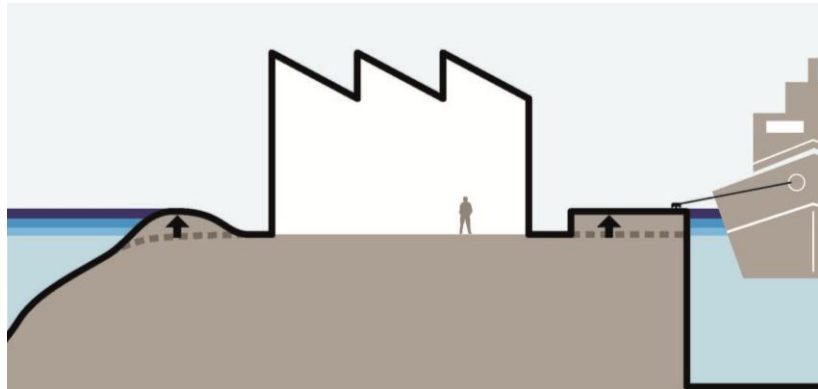
Aléas	Solutions envisagées	Coût	Délai
	Zone Prioritaire (accès principal, énergie, signalisation)		
Eau	Surélever les cheminements d'accès et le bâtiment, étanchéiser plancher bas du bâtiment		
Eau	Surface de rangement pour dispositifs de retenue d'eau provisoire		
Eau	Renforcer zones de rétention naturelle complété de puits d'infiltration si nécessaire, zones tampons et système d'évacuation renforcée		
RGA	Renfort des fondations des bâtiments selon nature des sols, vide sanitaire sous le bâtiment		
Tp	Créer des zones d'ombre, revêtement à fort albedo et matériaux non brulants		
Tn	Surface de rangement pour matériel de protection solaire		

Solutions in Ports

Protecting against flooding due to storms of SLR

Method

Using temporary Aquafence solutions as flood barrier or adapting infra.



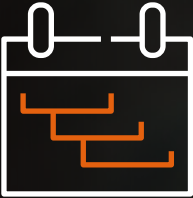
Solutions in Ports

Protecting against SLR

Method

Raising the whole area with 60-100cm





Investment Plan and Roadmap

- Investment plan matching budget constraints
- Cross CAPEX, OPEX, finance and maintenance
- Emergency Response Planning

#	Need	Step	Output / Product	Input Data Needed	Technology Support
A	How can I establish a roadmap to maintain business continuity?	Build various climate adaptation roadmaps and compare climate resilience performance obtained	1 or more optimized scenarios for strategic decision making	Output from previous steps	EDA
B	How can I generate an investment plan supporting my climate adaptation strategy?	Cross various CAPEX climate adaptation plan scenarios with normal CAPEX/OPEX network plan	1 or more investment plan showing impact on costs and time compared to baseline	Output from previous steps and step A	EDA

Technology enabled:

Confidence and Trust in Decision Making

Enterprise Decision Analytics (EDA) communicates powerful **WHAT-IF scenarios** by selecting different project options to satisfy an organization's objectives and clearly communicates the outcome. In this case, we launch EDA to ensure that once the rail network vulnerability has been studied and project options have been listed, we optimize our climate adaptation spend to maximize protection against climate hazards. This approach increases organizational alignment, builds trust and allows us to build an approach to easily update our plans over time.

EDA Delivers:



Decision Confidence



Performance Scenarios

WHAT-IF I want to maximise or minimize KPI's, incentives and penalties



Trust in Outcomes



Budgetary Scenarios

WHAT-IF my budget changes by +/- 20% or we have different costs of money



Optimal plans, QUICK



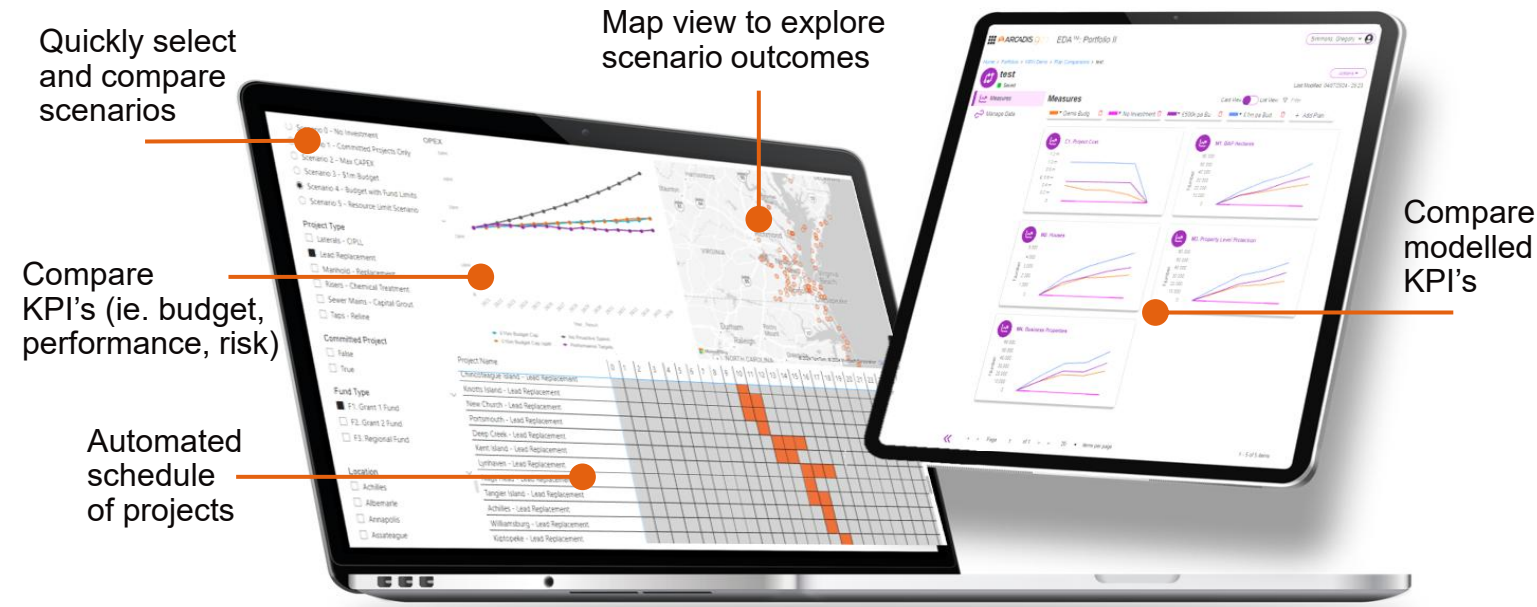
Risk Mitigation Scenarios

WHAT-IF I wanted to reduce my risk backlog by 30%

EDA is an Organizations Secret Weapon

Combat changing conditions and difficult stakeholders

EDA empowers senior leaders to justify investments across their portfolios, ensuring strategic control to maximize organizational benefits



Improved Efficiency

Up to
30%
More value with the same budget

Saved Time

Up to
95%
Reduction in planning and reporting times

Saved Cost

Up to
35%
Average cost reduction

Delivered Result

Up to
40%
Increased project execution accuracy



About Arcadis

Arcadis is the leading global design & consultancy organization for natural and built assets. We maximize impact for our clients and the communities they serve by providing effective solutions through sustainable outcomes, focus and scale, and digitalization. We are over 36,000 people, active in more than 70 countries that generate €5 billion in revenues. We support UN-Habitat with knowledge and expertise to improve the quality of life in rapidly growing cities around the world.

www.arcadis.com

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