



Ports & Terminals⁺ Capability Statement

Engineering & Professional Services



The Port Authority of New York & New Jersey Master Plan

“Our Port Master Plan Project was a complex undertaking for a very complex public agency. We have nothing but the highest praise for the entire Hatch organization and their professional approach. Creating a master plan requires a very hands-on and detailed look as to “what is under the hood” of your organization and the overall business climate.

We value the thoughtful and comprehensive approach that Hatch took. As noted in the survey, we were very pleased with Hatch at the front end of the project and equally pleased at the back-end.”

Sam Ruda

Director of PANYNJ Port Department

Hatch has been executing major port and terminal planning, design, procurement and construction management services across the globe for over 30 years. We thrive on tackling complex projects such as the one we executed for the Port Authority of New York and New Jersey

Our capability and expertise spans the globe and includes container, rail, dry bulk, break-bulk, liquids and auto operations. Our teams routinely apply operational insights, strategic thinking and high-level concept analysis to achieve early identification of best client outcomes, where analysis of a broad range of options is required to challenge the status quo, and provide clients with a clear path forward.

Our team recently completed the award-winning Long-Range Master Plan for The Port Authority of New York and New Jersey (PANYNJ), highlighting our ability to deliver complex studies. The project involved the development of a 30 year expansion and future-use plan for the six maritime facilities of PANYNJ, spread over 3,000 acres of land. Key value drivers included maximising and diversifying land use, increasing operational efficiency, and identifying innovative revenue opportunities.

We deployed Multi Criteria Analysis (MCA) to qualitatively assess a broad range of potential planning options, and applied Benefit Cost analysis techniques to identify preferred investment alternatives.

The final outcome of the Master Plan study involved a Hatch recommendation to focus the majority of future investment of the PANYNJ in the Port Jersey area, East of the historic focus area of Port Newark. A recommendation that challenged the current thinking of the client and stakeholders alike, but sets the port up for future expandability, resilience to both climate and business risks, and relieves capacity challenges associated with the congested Kill Van Kull waterway.



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Executive Summary

Ports are the heart of the global economy, facilitating the movement of over 90% of world trade.

Hatch understands that the ports sector today faces complex challenges on multiple fronts: global uncertainty, changing trade-patterns, climate change, decarbonization obligations, aging infrastructure, competition, security (cyber and physical), regulation, investor expectations and the need to do more with less (less land, less capital).

We understand that our clients need solutions that align with the specific needs of their operation. Whether conducting due diligence on the acquisition of a terminal, building a new terminal, expanding an existing one, deploying new technology or optimising an existing asset, we understand that our clients need to have confidence and certainty of project outcomes and that risks (project, operational, financial) need to be understood and managed. We deliver exemplary outcomes for our clients by recognising the need for multi-disciplinary teams; we bring together experts in technology, engineering, automation, digital, decarbonization, commissioning and finance with ports and terminals subject matter experts who have operational experience and know-how.

Hatch is a global multidisciplinary company with over six decades of business and technical experience in the infrastructure, mining and energy sectors. Focusing on core values of safety, quality, innovation and sustainability, our global network of 10,000 professionals work with our clients to safely and effectively deliver projects worldwide.

Whatever our clients envision, our team can plan, design and build.

One of Hatch's core values is that we are "flat and connected". What this means for our clients is that they can benefit from best practice expertise from across the globe as well as the opportunity to leverage lessons learned from different industries all while engaging with a local team who understand the local context and nuances.

Core to our value proposition is a team that features:

- **Operations Insights** through subject matter experts who have spent years working in terminal operations and successfully delivering terminal modernization projects (from inception through commissioning and operations support).
- **Reliable and predictable outcomes** through engineering excellence and project delivery processes built from corporate know-how evolved over our 70 plus year history of executing complex projects to help address some of our clients' most pressing challenges.
- **Global reach** through subject matter experts who will bring a vast array of lessons learnt and industry knowledge that will maximise value. Our subject matter experts are supported by a network of project execution and engineering practitioner across 65 offices and in 150+ countries.
- **A partnership model** to complement our Team, including working relationships with specialist providers, which we will leverage depending on the level of engagement and assignment requirements.
- **A "Smart Ports" mindset** that delivers project excellence and ports that thrive through Intelligent digital systems and sustainable design.

We look forward to the opportunity to work with you in delivering projects of the highest calibre.



Hatch Track Record & Relevant Experience



- Signifies countries where Hatch has executed projects
- Hatch offices
- Exemplar Projects

1 Long Range Master Plan – Port Authority of New York and New Jersey

The Port Authority of New York and New Jersey (PANYNJ) selected Hatch to provide port planning services to develop a Long-Range Master Plan for PANYNJ Port Facilities in the metropolitan area. Current land uses and facility operations throughout the Port vary widely and include conventional cargo handling (containers, bulk, break-bulk, and auto), cruise and ferry terminals, intermodal yards, warehousing and distribution centers, and open land. The project involves the development of a 30-Year Master Plan, aimed to maximize and diversify land use, increase operational efficiency, and identify innovative revenue opportunities at the various PANYNJ port facilities.

3 Westside Modernization Project - Port Saint John

To meet growing capacity needs, Port Saint John expanded its container terminal and intermodal capacity through the Westside Modernization Project. Despite challenging tidal conditions, Hatch designed and built eight 27-meter-high concrete caissons—among the tallest backfilled caissons in North America and the largest of their kind ever constructed in Eastern Canada—in a single construction season.

2 Sparrows Point Container Terminal – Tradepoint TiL Terminal

The Sparrows Point Container Terminal is a proposed 330-acre redevelopment in Maryland, featuring a 168-acre container terminal and intermodal yard, plus 162 acres for support facilities. Plans include a 3,000-foot wharf, eight ship-to-shore cranes, a 120-acre container yard, a 2,900-foot rail zone, road access infrastructure, ancillary buildings, and provisions for shore power and electrification. Hatch, as the prime consultant on this \$1B+ project, is leading detailed design and supporting TTT with permitting and contractor procurement.

4 Suez Canal Container Terminal - APM Terminals

At the Suez Canal Container Terminal (SCCT) in East Port Said, Egypt, APMT plans to expand operations with a third container terrace, over a decade after building the first two. The expansion, adjacent to live operations, required careful design and tender documentation to ensure minimal disruption to ongoing activities and safety.

5 Manhattan Cruise Terminal Master Plan - New York City Economic Development Corporation

Located on the Hudson River in Midtown Manhattan, the Manhattan Cruise Terminal (MCT) has driven economic growth for over 20 years, serving millions of passengers. However, rising costs, traffic congestion, and competition from other East Coast ports threaten its future. To address this, the NYC Economic Development Corporation engaged Hatch to develop a 30-year master plan under its Transportation Planning and Policy On-call Contract.



PORT ENGINEERING



MARINE ENGINEERING



DIGITAL



ASSET MANAGEMENT



ENERGY SYSTEMS



LOGISTICS



SUSTAINABILITY



ECONOMICS



LAND USE



STRATEGIC ADVICE

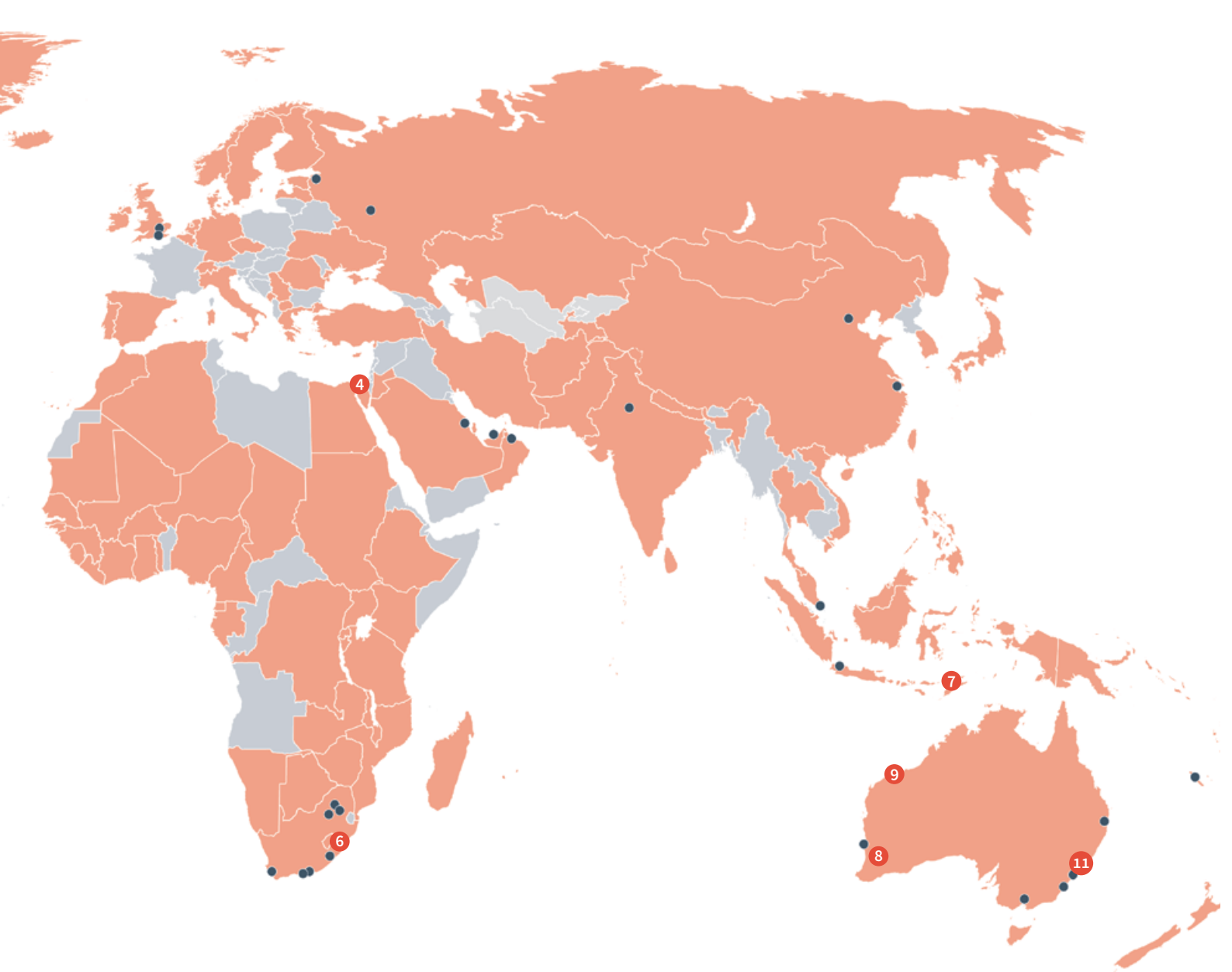


ENVIRONMENT



SOCIAL

Demonstrated Capability



6 Transnet New Berths (700's)

Transnet National Ports Authority (TNPA) appointed Hatch to provide full EPCM services for the development of proposed berths 709 and 710, covering all project phases—from concept and feasibility studies to commissioning and early terminal support. The scope also includes a high-level concept and layout for a multi-purpose terminal behind the new berths. This project is part of a broader Port of Richards Bay expansion, including upgrades to the 600 and 800 series berths and reconfiguration of the Bayview Rail Yard.

7 Wetar Barge Jetty Pyrite Export Facility - Merdeka Cooper Gold

PT BTR required a new port for product export but faced challenges due to the site's remote location and complex geotechnical conditions. Hatch mitigated logistical risks through dynamic supply chain simulation and applied value engineering to support the upstream mine and processing facility. Chosen for its global expertise, Hatch was sole-sourced to deliver all project phases from concept to execution support.

8 South Perth Place & Design Report / Activity Centre Masterplan - City of South Perth

Hatch Urban Solutions led a place-making and strategic planning initiative to develop a new city south of Perth. Through community-led planning and extensive engagement, the project addressed past controversies with technical input, bold urban design, and a shared vision to rebuild trust and guide future development.

9 BHP Western Australia Iron Ore – Shiploader 3 Replacement Project, Finucane Island, WA

Located at Finucane Island, Port Hedland, Shiploader 3 (SL3) has been a key contributor to WAIO exports since its commissioning in 1999. With its 30-year design life nearing completion, the SL3 Replacement Project is underway. Hatch, as the lead Engineering Service Provider, is delivering the full scope, including the marine superstructure, wharf conveyor, electrical and controls, and water systems.

10 Berth 2 Dumper 2 Project - Neptune Bulk Terminals – North Vancouver, BC

Neptune Terminals, a major multi-product bulk terminal on Vancouver's North Shore, has handled potash, coal, fertilizers, and agricultural products since 1968. The terminal is upgrading its Berth 2 Dumper 2 (B2D2) area to enhance potash handling by replacing or refurbishing aging infrastructure. The project includes demolishing existing structures, refurbishing Potash Dumper No. 2, replacing conveyors, retrofitting marine structures, and installing a new ship loader to replace two older units.

11 Western Sydney Aerotropolis - Western Parkland City Authority

Hatch Urban Solutions is leading an international team to master plan the Western Sydney Aerotropolis City Centre—Greater Sydney's third city and future gateway via the new Western Sydney International Airport. Spanning 200 hectares, this 24/7 global hub will be centered on a new Metro station and Thompson's Creek, aiming to become the world's greenest parkland city with circular water systems, carbon neutrality, and global benchmarks in innovation, sustainability, and livability.



Port and Terminal Engineering

Hatch are specialists in port and terminal development and planning across diverse capacity, situational, environmental, equipment, and road/rail interface variations. Our Port Engineering services range from the development of conceptual options that outline operating capacity alternatives and financial performance through to design of physical infrastructure and project delivery. Modelling and simulation capabilities can confirm the operational efficiency and throughput capacities for various types of ports and terminals. We specialise in integrating maritime and surface transportation systems in global gateway regions to coordinate land-use, transportation and logistics system development strategies.

Hatch's multi-disciplinary approach allows our design and operational professionals to collaborate in pursuit of optimum solutions for terminals, road, rail and power within ports. The continuous improvement of supply chains and port terminals require evolution of both the infrastructure and operational methodology, particularly as automation and digitisation becomes more prevalent. Terminal and supply chain automation offers many potential benefits in the pursuit of competitive advantage, and Hatch understands that realisation of objectives must be built on the platform of Port Engineering.

Hatch is also committed to building Port facilities in line with World Ports Sustainability Program guidance.



Port Infrastructure & Terminal design

Hatch has designed and executed ports and terminals projects across the world. Our approach considers financial, operational and transitional factors that deliver value for our clients.



Digital Project Delivery

Hatch delivers digital assets, not just physical ones. From the design documentation and drawings through to digital twins of physical assets. Our Digital Project Delivery approach provides significant benefits in cost, precision and resources.



Modelling & Simulation

Hatch can provide insight into complex evaluations and scenarios, using fit-for-purpose techniques from mathematical and dynamic modelling through to complex simulations and digital twins.



Power Systems

Power systems have been a core competency of Hatch since 1924. Hatch can integrate terminal infrastructure, asset management, and energy optimisation into a cohesive grid design, including renewable generation, storage, control and distribution.

-  **AFFORDABLE & CLEAN ENERGY**
-  **DECENT WORK & ECONOMIC GROWTH**
-  **INDUSTRY, INNOVATION & INFRASTRUCTURE**
-  **RESPONSIBLE CONSUMPTION & PRODUCTION**



DEMONSTRATED
CAPABILITY



MARINE
ENGINEERING



PORT
ENGINEERING

Centerm Expansion & South Shore Access

Projects Port Engineering

Hatch was the prime design consultant for the Centerm Expansion Project (CEP) and the South Shore Access Project (SSAP) in Vancouver (done concurrently).

Client Objectives

The Centerm Expansion Project and South Shore Access Project are being built to help meet anticipated near-term demand for containers shipped through the Port of Vancouver, increasing the Centerm container capacity by 2/3rds and providing the associated logistics infrastructure required.

Hatch solution/services:

Hatch was the prime design consultant for the Centennial Expansion Partners Design-Build JV team for the tender design phase of the on-terminal (CEP) and off-terminal (SSAP) scope.

Outcome/highlights:

- Increase maximum design capacity from 900,000 to 1.5 million TEUs, while only increasing the terminal footprint by 15 percent
- Leverage local knowledge and well-established working relationships with key stakeholders
- High profile project in a highly-urbanised environment
- Over 2.8 Km of roadwork design, in some areas in two levels modifications of existing roads, intersections and interchanges.
- Turbo roundabout design
- Extensive utility relocations and traffic management

Relevant experience: Port of Los Angeles, Pier 300 Modernization Master Planning, California, USA; Port of Long Beach, Middle Harbor Automated Container Terminal Operational and Capacity Review, California, USA; Port of New York and New Jersey Long-Range Strategic Master Planning, Port Authority of New York and New Jersey, NYNY, USA; Study on Australian Port Planning and Performance Evaluation, Ports of Sydney and Melbourne, Australia.

Relevant experience: Cross River Rail Project, Brisbane. Hatch has Project experience in over 150 countries with US\$50+ billion of projects & assignments under management.

Relevant experience: Port of Los Angeles, Pier 300 Modernisation (terminal operations and capacity analyses) Port of Long Beach Land Use Master Planning (capacity modelling and analysis) Port of Halifax Master Planning (terminal and port-wide operational and capacity analysis)

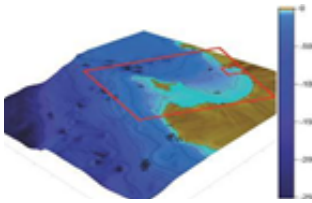
Relevant experience: Hybrid Power Microgrid (EPCM), Glencore Raglan Mine (incl. wind & hydrogen); Clean Energy Study, Port Authority of New York and New Jersey; Port MiniGrid Study, Arawak Port Development: Nassau, Bahama.



Marine Engineering

Marine Engineering is fundamental to any port fulfilling its core purpose, and true expertise is required to deliver functional outcomes whilst meeting the challenges of climate change, environmental management and social improvement.

Hatch understands the complexity in fulfilling the functional requirements of a port development from site selection and master planning to the design and construction of wharves, piers, coastal structures and terminal infrastructure. We offer the complete range of marine engineering services, which leverages both our local and global capabilities to ensure our Clients benefit from lessons learnt and world's best practices.



Coastal Engineering, including dredging & breakwaters

With state-of-the-art analysis methods and design tools, we're your partner. We deliver innovative, cost-effective, and constructable projects. Our coastal engineers have expertise in all of the following areas – wind and wave climate analysis, vessel hydrodynamics and berthing, sediment assessment, hydraulic modelling, navigation simulation, site investigation planning, coastal protection, breakwater design, and dredging design.

Relevant experience: BMA Hay Point Terminal reclamation and breakwater design, NCIG Project dredging and reclamation works, Centerm Expansion Project.

Marine Structures

Successful ports depend on a variety of marine structures, including piers, bulkheads, coffer cells, revetments and approach structures. You can trust us with all of your marine structural requirements, including above-water and underwater inspection supervision, coastal process modelling and wave forces analysis, mooring and berthing analysis, marine structural design and construction cost estimating.

Relevant experience: Patricks Fremantle Container Terminal 3 master planning and concept design, Saint John Harbour Expansion, and Wiggins Island Coal Terminal.

Operability Assessments

It's always imperative to consider the entire logistics-supply corridor. Our unique approach draws on our in-depth expertise and well-rounded knowledge of commodity production and logistics supply chains. Using fit-for-purpose analytic and modelling techniques, we are able to undertake operability assessments that examine multiple factors including planned capital/operational budgetary targets.

Relevant experience: Transnet Durban Container Terminal, Richard Bay Multi-purpose and Dry Bulk Terminals, BHP WAIO.

Hatch has in-house optimisation and modelling tools, and partnerships with other industry specialists as required.



DEMONSTRATED
CAPABILITY



MARINE
ENGINEERING



PORT
ENGINEERING

Westside Modernization Project New Brunswick, Canada

In order to meet increasing capacity needs, Port Saint John wanted to expand its container terminal and intermodal capacity.

Challenges

- Need to construct scalable infrastructure to meet increased capacity while still maintaining port operations in some of the world's highest tides.
- Significant design and operational challenges, including 8-meter-high tides and the dredging of approx. 600,000 m³ of soft soils.

Hatch Solution

- Led upgrades, design, and development of innovative infrastructure to accommodate future high capacity at the port including a second berth to accommodate larger vessels, extra tall concrete caissons, and a new 9,000-foot intermodal rail yard that is scalable.
- Designed and developed a combination wall reinforcement for the existing wharf and a piled wall to connect the new berth while preparing and managing multiple dredging contracts.
- Assisted with consultation efforts with local First Nations, engaging directly with communities to develop capacity agreements in support of continued relationship-building between Port Authority and the Nations throughout project construction.

Highlights

- In one construction season, designed and constructed eight 27-meter-high concrete caissons, which had never been built to this size previously in Eastern Canada. These caissons are one of the tallest backfilled caissons in North America.
- Dredged 600,000 m³ of soft soils and reused the soils as land reclamation, creating several acres of land, increasing the size of the Port's container terminal, mitigating major environmental disruption, and saving project costs.

Winner of the ACEC New Brunswick 2023 Power of Collaboration Award.

Client: Port Saint John

Port Expansion Project - Customs Free Zone Cartagena, Colombia

Hatch was engaged to provide timely, cost-effective, sustainable solutions that assist Argos in constructing a new port terminal that will triple its capacity to receive and export products. The new terminal will substantially increase cement exports to the United States, taking advantage of the growing demand for construction materials in that country

Challenges

- Use technologies to reduce atmospheric emissions to comply with both the environmental and legal requirements, as well as the BASC, OEA and ISPS requirements. (lower particulate matter emissions below 20 mg/Nm³)
- Taking the necessary safety precautions to keep the construction project on schedule despite the COVID-19 pandemic

Solution

- Oversaw the integration of all disciplines and equipment suppliers
- Integrated local engineering performed by the civil designer
- Provided detailed mechanical, electrical, and instrumentation and control engineering
- Delivered innovative plans, reports, dynamic simulations, 3D models, and CAPEX elaboration
- Supported review of information and structures in the field and performed the inspection of the equipment received by the project's main supplier

Highlights

- The new terminal will offer a loading rate of 1,200 tons per hour for cement and 900 tons per hour for clinker
- Technical support in the field, and inspection of equipment delivered by the main supplier of the project, added value to the client for the development of the project
- At the completion date, this megaproject will have used more than 10,000 cubic meters of concrete, 1,200 tons of reinforcing steel, about 5 kilometers of piling, and will have installed 2,658 tons between equipment and metal structure

Client: Argos

Project duration: 2018-2022



Automation Technology

Ports and Terminal Operators rely on digital systems and technologies to facilitate the safe, effective and predictable execution of operational processes. As new technologies are implemented, systems implementation and integration projects are often more challenging than anticipated with protracted ramp-ups and can fail to deliver on the promised business case. What appears to be a simple system upgrade, or implementation of a new feature can introduce new integration requirements or workflows, which, if not planned and executed correctly, can introduce detrimental impacts.

Hatch has a proven track record of helping our clients successfully implement new systems and technologies. Hatch's approach uses a blended team of subject matter experts who have operational experience and understanding of the nuances of the container handling operational processes; digital and automation practitioners who bring deep technical expertise of industrial technologies and architectures including best practices from other industries; and change management experts who understand how to successfully introduce new technologies and processes to people.

Automation Consulting

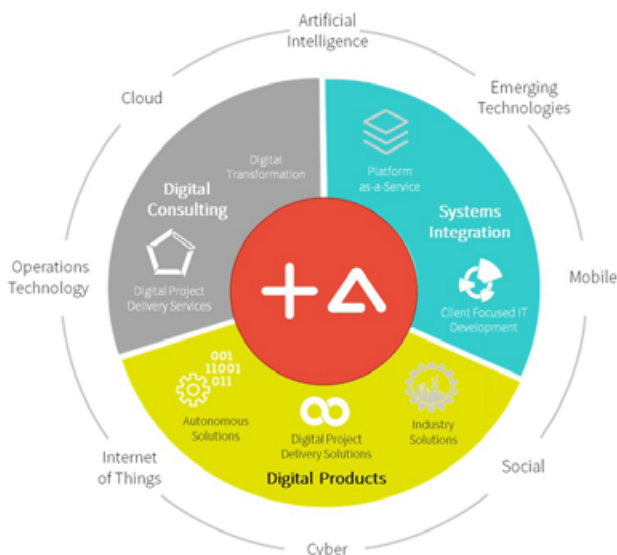
Our consulting teams collaborate with clients to identify value improvement opportunities, to map out appropriate scenarios for the use of automation technologies and to build strategies and roadmaps to evolve your business to the next level of digital maturity. With SMEs experienced with terminal operations, we understand that automation should support the operational goals and not implemented for the sake of automation.

System Integration

Any technology or system introduced into an operating environment does not exist on its own. These typically need to be integrated with other systems, the equipment, operational processes and sometimes even the physical infrastructure. Hatch has specialized experience helping our clients with planning, specifying, validating and preparing the operation to accept new systems.

Digital Products

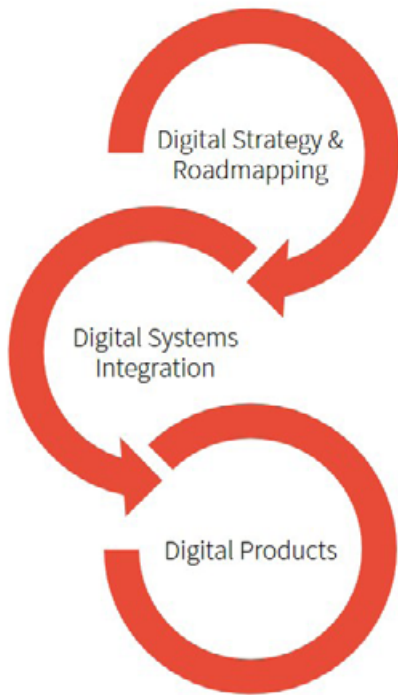
The velocity and quantity of data being created is unprecedented; however, making sense of the data and gathering a real understanding of "what the data is saying" remains a challenge. Hatch has created a range of solutions that can support the accelerated development of your digital operations, help you create valuable knowledge on the performance of your operations, and provide a solid foundation for machine learning and other emerging artificial intelligence tools.



Technology and Automation

Hatch has been helping companies achieve improved safety, productivity and efficiency for more than 70 years. We will leverage this knowledge and experience to develop and implement tailored automation systems that meet your operation's specific needs.

Our expertise covers a broad range of application and industries, from basic control to complete integration and optimisation of your facility. With more than 500 engineers and technicians dedicated to automation globally, we are able to complete successfully the most demanding projects. Our broad range of services and our flexibility allows us to handle projects of any size and complexity, from basic engineering and programming to commissioning and start-up.



Relevant experience: Confidential Client – Concept of Operations, Systems Strategy and Roadmap for Rail Operation Modernization; Salta Dandenong South Inland Port - Digital Automation Consulting and Crane Engineering; BHP - Technology development for Digital Project Execution, Transnet - National Rail System IOC design and implementation; Shenhua Huanghua Port – Systems Strategy & Roadmap

Relevant experience: BHP Maintenance Centre of Excellence, ARTC predictive rail maintenance system, TraPac Terminal automation, Ports of Auckland TOS Upgrade Advisory Services, APM Terminals Project M QA Advisory and Simulator Development (Ship to Shore Crane, Gate)

Relevant experience: Electricity Provider – ISO 55000 compliant Predictive Asset Management for fleet, multiple, Hatch Dredge automation, Digital Value Chain software, HxO optimisation tools, simulation and modelling software.



TraPac Automation

Since 2016, Hatch has been providing advisory and consulting services at the TraPac terminal at the Port of Los Angeles. Our work has successfully introduced concepts and approaches from other industries to help achieve TraPac's goals.

Client Objectives

TraPac is one of the first fully automated container terminals established in North America and required systems and tools to improve in-depth analysis and operational efficiency.

Hatch solution/services:

Data management of terminal operational and maintenance systems, implementation of data historians, rail planning systems, emulation, simulation, QA and testing services.

Outcome/highlights:

- The new data-centric environment is driving a shift in culture and helping TraPac meet its goals for the future. Having the right tools and the right data available together in a central location allows quick analysis, insights, and timely issue-resolution.
- Improved operational efficiency. Cycle times in the wide-span rail-mounted gantry cranes were reduced by 10 percent with the automated on-dock rail.
- Expedited root-cause analyses. The root cause of a rail-mounted gantry crane's spreader issues in the automated on-dock rail were identified in hours rather than weeks.
- Improved maintenance compliance. Predictive maintenance schedules are now one-hundred percent on target.



Asset Management

Ports and terminals are a collection of physical assets that represent significant capital investment. We bring best practices, tactical tools and deep expertise to develop tailored solutions that extend asset life, reduce TCO, and improve productivity across a broad range of fixed assets.

Hatch uses a proprietary approach combining operational experience, ISO 55000 compliant processes, equipment and production process know how, organisational enablement, behaviour focus, leading edge digital solutions, and end-to-end delivery support to ensure your asset management systems are best-practice.

We believe most businesses operating in asset intensive industries are leaving large amounts of value on the table due to sub-optimal practices and we know we are uniquely qualified to help such clients achieve the exponential returns possible by making Asset Intelligence a core competency.

Life Cycle Philosophy

To disrupt a reactive culture and move to a place where optimised decisions are made consistently and systematically requires a transformation. Hatch's life cycle asset management approach uniquely combines capabilities in organisational change, technical know-how, analytics, tools, processes and behaviours to achieve and sustain higher returns year on year.

Capital Planning

Based on best practice asset management, beyond the requirements of ISO 55000, capital planning addresses asset actions over short, medium and long time horizons. We source and analyse data-driven inputs including service delivery priorities, asset health, growth, stakeholder needs, technological and environmental change, resource constraints and corporate objectives across the asset base. Hatch knows how to up-skill your organisation and install the business processes and tools to rapidly generate leading asset management plans.

Digital Systems

Build high quality, standardised and comprehensive master data and then embed it with automation, processes and people skills. Hatch's experience will set the master data foundation for efficient planning and work execution, strategy management, operational readiness, advanced analytics - breaking down silos and transforming practice.

Asset Intelligence

Technology has reached a point where Predictive Maintenance (PdM) is not only a reality, but is fast becoming a basic requirement for asset intensive industry. Understanding your position on the digital asset management maturity scale is the first step towards increasing business value by simultaneously reducing downtime, risk and cost. Hatch's asset intelligence model combines asset and maintenance management expertise, with systems integration, data sciences, equipment and process technical knowledge, and advisory management to deliver scalable PdM solutions.

Reliability Enhancement and Defect Elimination

All equipment is designed and manufactured with a genetic code that determines how it will perform and how long it will last. Defects are introduced when design conditions are not preserved such as over-limit operating duty and lack of precision maintenance. Hatch uses a proven, systemic and proactive method and leading experts to identify, monitor and remove defects and their root causes from your equipment. The result is a step-change in your asset strategies and the people that drive them.





Mobile Asset Management Transformation

Electricity Distributor - Australia

3500 specialized mobile assets servicing Australia's largest electricity network in remote, harsh environments

Client Objectives

Improved outsourced Asset and Maintenance Management of vehicle fleet to enhance safety, performance and cost outcomes.

Hatch solution/services:

- Diagnostic
- Asset Lifecycle Management Application (LCMA)
- Organisational design and sizing
- Work management processes and SOPs
- Organisational enablement and change management support
- Scoping and Implementation of In-Vehicle Management System

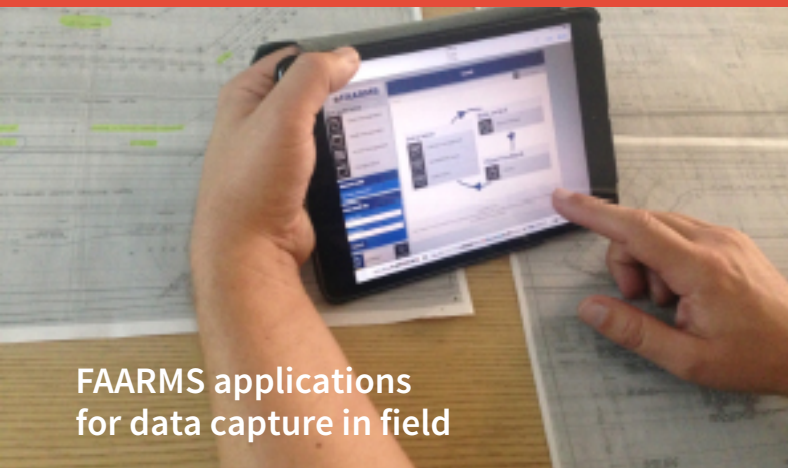
Outcome/highlights:

- Improved safety and operational performance
- Reduced exposure to legal and other business risks
- Savings of circa \$9M annually
- Increased asset availability and utilisation
- Alignment with ISO 55000
- Increased maintenance quality and responsiveness

FAARMS

Facility and Assets Risk Management System

- 250+ clients around the world
- FAARMS is Hatch's own asset integrity methodology and data management tool
- FAARMS stores the data for all assets in one location and provides consistency and repeatability for inspections
- Provides increased asset integrity assurance through visibility and improved understanding of asset health
- Preset criteria for background content ensure that inspection data is consistent across both inspectors and assets
- Ability to perform re-audits of previous inspections and provide trends of asset



FAARMS applications for data capture in field

Australian Rail Track Corporation (ARTC) – Asset Management Strategy

Newcastle, NSW

"I was impressed with Hatch's extent of understanding maintenance, management of rail infrastructure and their approach to transition our business to a more effective asset management strategy."

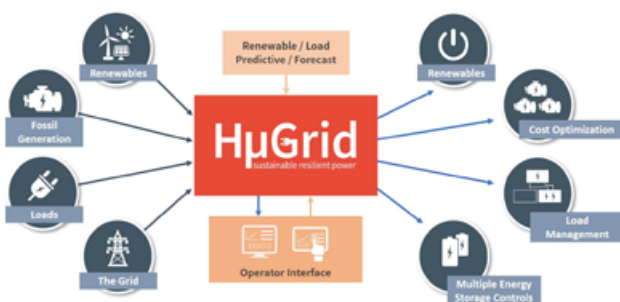
Andrew Betts, General Manager Asset Delivery, Hunter Valley, ARTC.



Energy

Hatch's power team has nearly a century of experience in the development, design, construction management, and operations and maintenance support for traditional gas, diesel, nuclear, and hydro power plants to modern renewable, geothermal, electric, and hydrogen generation systems. Our global transmission and distribution system expertise includes system planning, conceptual and national & regional energy planning, to integrated modern complex wind-solar-diesel-storage microgrid systems to provide system resiliency, reliability, and stable power quality to industrial, municipal, and infrastructure clients of all sizes in over 150 countries.

Energy solutions for the decades ahead will increasingly rely on clean, sustainable sources generated locally with increasing self-reliance. Hatch's experience with (near) zero emission solutions allow for flexible growth due to increasing business demands and loads from electrification while embarking on the energy transition integration with business planning and operations.



Micro-grid power systems

For clients operating in locations prone to significant climate events, in geographies with weak power grid, in remote or islanded environments, or in sectors where power outages of any duration seriously impact business continuity, electrical self-reliance may be an economically viable option. Hatch's concept to commissioning experience can support your early strategies and busies case developments through the system design, equipment selection, and construction, to final commissioning and functional optimisation tuning. Hatch's proprietary microgrid controller technology can be deployed, where multiple storage technologies, intermittent generation sources, and challenging reliability and power quality targets must be achieved.

Hybrid Power Systems

A hybrid power system typically combines renewable power sources, a fleet of fossil fuel generators, and energy storage. It uses a microgrid controller to strategically dispatch energy production assets, meeting the load by ensuring the stability of the grid.

Hybrid power systems can handle the on-and-off contingencies, manage the integration of large amounts of renewable power, and ensure that power is reliably maintained. Our systems are designed with storage, microgrid controllers, and backup generators. They have automatic mechanisms for frequency control and voltage support, so the demand for power is always met without interruptions. You get reliable power, as green and cost-effective as conditions allow. Anywhere. Anytime.



Clean Energy Community Microgrid, City of Berkeley

The Berkeley Energy Assurance Transformation explored the opportunities for dense urban cities to utilise solar and energy storage to share power across multiple facilities. During normal conditions the system would utilise these resources as a way to better regulate day-to-day energy supply, and in the case of a power outage, the system could “island” from the main utility and provide clean backup power for critical buildings.

Client Objectives

Feasibility study for a Clean Energy Microgrid Community (CEMC) that advances energy reliability, increases energy efficiency, and improves access to clean energy for public and private facilities in a dense urban context.

Hatch solution/services:

- Energy model & microgrid optimisation
- Capital costs analysis
- Revenue streams & savings review
- Financial & operation risk mitigation
- Identify sources of funding, financing & incentives

Raglan Mine Integrated Energy

Hatch was a key player in finding the right energy mix for Glencore’s Raglan Mine.

Client Objectives

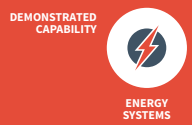
Reduce energy costs, reliance on diesel fuel, and greenhouse gas emissions on a remote mining project.

Hatch solution/services:

Designed and implemented the Hatch Microgrid (HμGrid), which monitors demand for wind power and supply variations, and economically dispatches the charger and discharge from energy storage units to smooth out wind power variations and displace diesel generation.

Outcome/highlights:

- 2019 Mercuriades Award of Excellence in sustainability development strategy.
- First-of-its-kind project.
- Engineering and construction was fast-tracked to be completed within the short Arctic summer construction window; the project was completed within budget.
- Successfully worked with the power plant operators who operate both gensets and wind power in order to maintain the grid stability.
- 18,000 site hours with zero lost-time injuries.

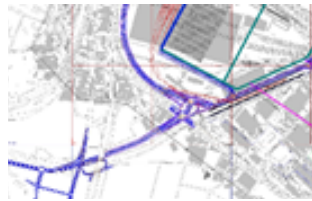




Logistics

There are few things that reliably predict the lifestyle, safety, and economic viability of a Port so well as the logistics networks that connect and interconnect it. Reliable, efficient, safe and sustainable transport infrastructure is key to supporting the economic health and growth of any Port. We offer a full range of road and rail engineering services backed by decades of experience, and a track record of delivering large scale projects across the globe. Our Ports team have experience in terminals throughout the world, with practical experience as operators and owner's engineers including design, commissioning and operational support services for several automated facilities.

As a world-class infrastructure design firm, Hatch deploys expertise from around the world to solve technically challenging projects and deliver a cross functional approach to complex logistics problems. Our Team has extensive experience in traffic engineering, demand modelling, logistics system integration, finance, civil engineering and digital infrastructure. Our solutions are purpose driven and integrate innovation to deliver value to our clients. We have experts that are developing and engineering future technologies for the transport infrastructure industry, such as hyperloop, autonomous vehicles, micro-transit, integrated logistics value chains, digitisation, electrification, etc.



Road Engineering

Hatch delivers civil and traffic engineering demand modelling, economics, social science, finance, engineering, and digital.



Rail engineering

We have technical experts in all disciplines of railway engineering and project implementation. Rail is key to unlocking congestion, maintaining efficient movement of goods, and exploring opportunities for sustainable and 'green' supply chains.



Port & Supply Chain Operations

Hatch's port team combine operational experience and technical know-how via domain knowledge of equipment, technology, software, process, landside and waterside interface, safety, commercial and sector legislation.



DEMONSTRATED
CAPABILITY



LOGISTICS



PORT
ENGINEERING

Relevant experience: Transport Master Plan (Port of Durban), Western Roads Upgrades (VIC - civil and structural design), Brisbane Cross River Rail (civil design – road, stations, pedestrians); Monash Freeway Upgrade (tender design), Metro Tunnel Project (Independent Reviewer).

Relevant experience: Nearly a century of extensive experience in all aspects of rail engineering, including: Newcastle Light Rail (Planning & Simulation), Sydney Rail Digital (Rail engineering), New York Transit (engineering, power, modelling).

Relevant experience: TraPac terminal, Port of LA (Owner's engineers / operational advisory), APMT Pier 400 (Advisory / QA team for terminal automation), Patrick Terminals (Advisory)

Port of Durban Logistic Master Planning

Hatch (in JV as lead) was the EPCM contractor appointed to design and deliver the road, rail and port infrastructure needed for Transnet's expansion programme. The assignment involved delivering operational infrastructure responses to forecast demand and translating the identified operational and infrastructure needs into spatial requirements within the Port boundaries and interface points.

Client Objectives

Transnet wanted to expand the ports and freight networks throughout South Africa over a 15 year period starting in 2006. The ambitious US \$12 Billion program was essential for the nation's continued economic growth, especially with growing cargo movement becoming constrained by insufficient port and rail capacity.

Hatch solution/services:

- A master plan for the accommodation of containers, bulk liquids, automobiles, fresh produce and break-bulk commodities - exploring operational accommodation options, transport infrastructure needs and bulk services requirements.
- Assessing the impact of increased terminal operations on traffic flows and designing the transport infrastructure to satisfy the logistics needs of the port without compromising the mobility needs of citizens.
- Hatch, through the HMG JV, was also responsible for the execution of most of the larger "mega" projects undertaken by Transnet.

Outcome/highlights:

- Key inputs and assistance in the development of the National Infrastructure Plan to 2036.
- 1,277 contracts let and managed with no major contractual issues
- Provision of world-benchmarked processes and practices
- Procurement governance established and operational

Client: Transnet



Land Use

Population and economic growth inevitably place pressure on critical port infrastructure and freight and logistics connections, and effective responses to these factors must strengthen the livability of our cities and ensure our way of life is maintained and enhanced. The location, design and broader logistical network associated with Ports are of regional significance and shape the future direction of our cities and towns throughout their life.

Hatch Urban Solutions is a multi-disciplinary practice that has a reputation as an industry leader in the fields of town planning, urban design, placemaking and community engagement. We have been working on complex, city shaping projects across Australia and internationally for over 25 years. Key projects that demonstrate this experience include our flagship new town Ellenbrook, the industrial re-visioning of Claisebrook, and more recently the precinct planning and alignment studies associated with Morley to Ellenbrook Railway extension, strategic planning and urban design input into the Ipswich to Springfield Public Transport Corridor, the planning and design of the Western Sydney Aerotropolis, urban design inputs into the Gold Coast Airport masterplan, and the CLARA consortium bid to design a series of contemporary smart cities connected via high-speed rail infrastructure between Sydney, Canberra and Melbourne.

This level of experience is supplemented by wide ranging commercial and industrial park experience including Kwinana Industrial Estate, Bibra Lake Amcor redevelopment, Forrestdale Business Park, Port Kennedy Business Park, Neerabup Industrial Estate, Henderson Marine Precinct, Oakajee Port and Industrial Estate, Glebe Island and White Bay Port and previous portfolio work for Bunnings and BP.

This depth of experience provides the team with extensive knowledge across the core areas of competencies that we believe will be necessary to deliver the land use requirements associated with the Port of Brisbane, including:



Port Planning and Visioning

Implementation of zoning requirements, port installations reserves, associated industrial land and primary regional roads reservations, as well as port precinct masterplanning.



Logistics and Freight Planning

The planning and logical layout of surrounding precincts to ensure optimised operational efficiency, diversity of land uses and maximising business and employment opportunities.



Employment Lands Planning

Leveraging the investment in the port to create opportunities for industrial land that benefits from the ports strategic transport infrastructure and location.



Industrial Re-Visioning

The movement of the port use areas over time creates unique opportunities to reposition and reconsider the strategic role of land into the future.



Relevant experience: New York + New Jersey Port Master Plan, Fremantle's Victoria Quay Masterplan, Oakajee Industrial Area + Deep Water Port, Glebe Island, White Bay and Rozelle Bay port facilities.

Relevant experience: Bew Base Brendale logistics hub designed for Aldi and the super retail group in Queensland.

Relevant experience: Kemps Creek Master Plan on behalf of Frasers + Altis and portfolio work for Aventus, Harvey Norman and Goodman.

Relevant experience: Extensive experience across Australia, including existing master-planning associated with Victoria Quay.

DEMONSTRATED
CAPABILITY



LAND USE



STRATEGIC
ADVICE



SOCIAL

The Future of Fremantle (WA, AUS)

A highly collaborative stakeholder process to reimagine the Fremantle Inner Harbour (over 300ha), following the relocation of container operations to Westport, Kwinana. The work established a 50-year vision capturing the community's cultural values while setting bold and aspirational transformation into a global waterfront city for 55,000 residents, potential for 45,000 new jobs and \$13.6 billion in gross state product annually. The 'Place and Economic Vision' is interpreted through 6 precincts, each defined by their unique place characteristics and economic role to support emerging strategic and diversified economic drivers for Perth and Western Australia. The Future of Fremantle identifies critical transport and infrastructure investment to support an evolving Port-City relationship and its future role that will transform land use and movement at a metropolitan scale.

Client

Department of Planning Lands and Heritage

Date of Completion

November 2024



Strategic Advice

The evolution of a Port within its existing urban setting, its transport and logistical connections and relationship with the hinterland, and the rapidly changing technical environment create a series of challenges and opportunities that need to be addressed. Key to the future of any port is the management of public sentiment, aligning project stakeholders, fostering community support and encouraging private investment - all whilst implementing the changes needed for growth, competitive advantage and advances in technology.

Hatch acknowledges the unique challenges and scrutiny associated with the delivery of critical infrastructure projects. We have extensive background in managing high profile, politically sensitive projects of state and regional significance, and use our place-led approach to focus thinking to create a strong project vision that resonates with all key project stakeholders and deliver projects that generate value for the community and our clients.

Our core services of strategic advice, engagement, strategic planning and communications help us to become trusted advisors to our clients, playing a central role in coordinating and managing project teams, and providing ongoing advice. This is demonstrated through our long-term involvement in key projects including Ellenbrook New Town (25 years), Jindee (20 years) and ongoing roles in city shaping scale of projects for major government clients, including new railway lines and stations, port infrastructure and airport developments.

Our diverse project portfolio of complex community, cultural and city shaping challenges demonstrates effective engagement strategies, strong communication skills and deep technical and community knowledge. We are also highly adept at risk management and have a strong track record of working alongside clients, government and the community.



Communications & Engagement

Providing strategic advice relating to communications and messaging to ensure a well-defined public benefit story and engagement strategies to align all key project stakeholders and influencers.



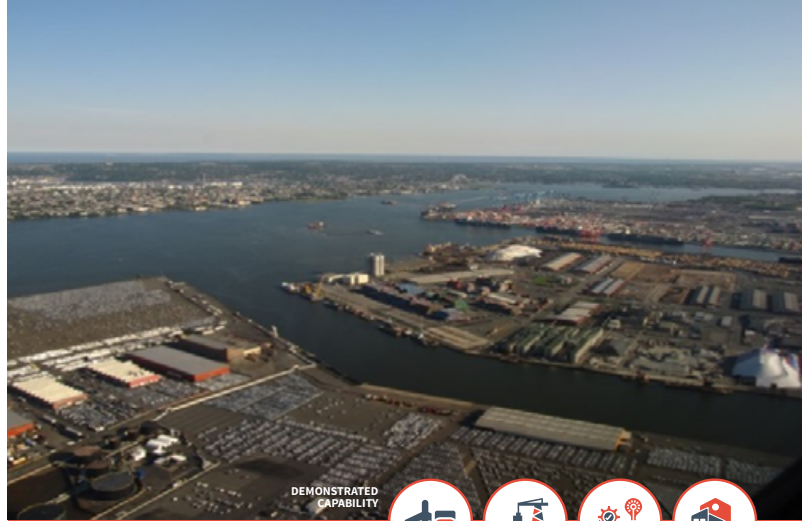
Strategic Planning

Formulating a vision and delivery principles to ensure strategic objectives are met and are central to the project strategy and execution of Westport's mandate.



Program Management and Reporting, including Change & Risk Management

Hatch's Advisory practice has approximately 150 professionals worldwide, who provide tailored management consulting services to our Clients. The 'noble purpose' of our Advisory practice to identify the hidden value embedded in our Client's assets, organisations and technology; and to unlock the enablers required to unleash this full potential. Most of our advisory practitioners are seasoned professionals with Tier 1 consulting experience (McKinsey, Bain, BCG, EY etc.) combined with relevant line management experience (more than 10 years). In terms of functional areas, our advisory practice brings world class expertise in organisation design, change management, risk management and program management.



DEMONSTRATED
CAPABILITY



LOGISTICS



PORT
ENGINEERING



STRATEGIC
ADVICE



COMMERCIAL

Port of New York & New Jersey

The Port Authority of New York and New Jersey (PANYNJ) engaged Hatch to deliver their 30-Year strategic Master Plan and Hatch Urban Solutions to provide strategic advice and stakeholder engagement services to ensure alignment of key project partners.

The primary objective of the brief was to maximise and diversify land use, increase port efficiency, and identify innovative revenue opportunities at the various PANYNJ facilities.

As part of the formation of the plan, Hatch Urban Solutions developed a stakeholder Engagement Plan, which included the identification of host-community residents and representatives, federal agencies, planning associations, and shipping industry representatives that had significant interest levels in the formation and implementation of the masterplan.

A Stakeholder Outreach programme was then undertaken, which included strategic engagement with federal, state, and local officials and agencies, industry representatives, and community groups, including focus group facilitation. Ongoing strategic advice was provided to ensure the feedback received was represented within the masterplan, and ensure its alignment with key expectations and sensitive issues.

A range of innovative services were also undertaken, which included a detailed review of relevant historic cargo throughput, future cargo projections, on-port and non-maritime land use, as well as environmental and transportation related issues. Data from these studies was then used to conduct a cargo market analysis and capacity assessment to estimate timing and criticality of capacity shortfalls on-port and within the surrounding rail and road network.

Client: Port Authority of New York and New Jersey

Date: Oct 2016 - Feb 2018

Relevant experience: Hatch RobertsDay have led engagement strategies and coordinated over fifty 3-5 day Planning Design Forums across Australia, New Zealand and the Middle East, including high profile local projects such as South Perth Peninsula, Subiaco Pavilion and Yanchep Lagoon.

Relevant experience: Extensive experience in the formulation of visions for strategic development projects that project longevity and direction to the project, including the case study opposite outlining our role in Ellenbrook New Town.

Relevant experience: Recent advisory engagements include a comprehensive organisation design and change management program for a large power utility in Australia, a complex program management engagement for a steel mill in the middle East which was associated with a large technology driven business improvement initiative and a broad corporate critical risk management review and organisation design (with change management) for a Tier one iron ore producer.



About Hatch

Hatch is an employee-owned, multidisciplinary professional services firm that delivers a comprehensive array of technical and strategic services, including consulting, information technology, engineering, process development, and project and construction management to the Mining, Metallurgical, Energy, and Infrastructure sectors.

Hatch has served clients for over six decades with corporate roots extending over 100 years and has project experience in more than 150 countries around the world.