LEDERATES Capability Statement

Norman Disney&

Table of contents

Our values, purpose & vision
What we do
Our ports capabilities
A sustainable port of call
A Subtainable port of can













Intro**duction**

We have a significant track record in delivering ports projects in Australia and internationally.

Established in 1959, Norman Disney & Young (NDY) has a long and proud history of offering an extensive range of engineering services and delivering awardwinning world-class projects.

Reliability, high performance and environmental controls underpin our offering in the transport sector. NDY has provided engineering services to this sector for many years and our staff have a thorough understanding of the inherent requirements.

NDY has completed a number of marine and ports projects across Australia, having delivered a range of services including electrical, hydraulics, fire and security services.

Our major project experience serves us well. We are also equipped to complete smaller jobs in a cost effective manner. We work closely with all parties involved and have a global pool of talent from which to draw.

Our **values**

Excellence

Do it once, do it well

Leadership

Lead in our profession, industry and the community

Integrity

Treat others as we wish to be treated

Collaboration

Listen, share and contribute

Accountability & Ownership

Understand the impact of our actions and own the outcomes

Innovation

Inspired creativity to challenge the norm

Our purpose is making spaces work

Our **vision**

To enhance the lives of others, by engineering outstanding projects, mindful that every project matters.

To sustain deep and trusting relationships with our clients, through solving their problems and serving them with utmost reliability,

and

To engage our people with meaningful, rewarding and inspiring opportunities.

Our ethical statement

NDY has a proud tradition of upholding the highest ethical standards in the manner by which we conduct ourselves as a company. Read our ethical statement at **www.ndy.com/about-us/our-ethical-statement**





What **we do**

As consulting engineers, our purpose is making spaces work. We listen to the unique requirements of each client, and tailor our services accordingly to every project.

Our collaborative approach to excellence and innovation are core values at NDY. We consistently deliver best practice sustainable solutions to achieve our clients' objectives.

Clients come to NDY because they want quality. We take ownership and provide clear recommendations while consulting with the utmost integrity.

Most of all, clients come to us because we listen. We look forward to better understanding your business and collaborating with you to achieve successful outcomes.

Our markets

- > Civic
- Education
- > Health
- Industrial
- Mission Critical
- Offices
- Residential & Hotels
- Retail
- Transport

Our services

- Acoustics
- Asset Performance
- Audio Visual
- BIM (Building Information Modelling)
- Communications
- Controls & Integration
- Electrical
- Fire Engineering
- Fire Protection

- Hydraulics
- ICT Consultancy
- Interiors
- Mechanical
- NDYLIGHT (Lighting Design)
- Property Consultancy
- Security
- Sustainability
- Vertical Transportation

Our ports capabilities

A diverse range of facilities fall within the 'port' designation. NDY's experience and skillset has been sought on developments ranging from urban waterfront tourist enclaves to remote industrial multi-modal facilities handling the transfer of thousands of tonnes per hour of iron ore from freight trains to bulk ore carriers.

Development types include:

- Bulk handling facilities, with dust suppression, fire systems and issues associated with very large sites (from security to power reticulation) are paramount
- Maintenance and ship building facilities, with a focus on temporary service provisions to vessels and construction activity
- Military facilities, either for ADF/DMO or their contractors, with associated specialist security and management environments
- Commercial entertainment precincts, where our expertise in land based food and beverage and retail sectors has been applied on or over water; application of creative lighting design, audio visual and ICT can underpin iconic 'destination' developments.

In the provision of engineering services infrastructure for maritime developments, NDY brings specialist focus in the following areas:

- Considering the harmful effects of the marine environment on complex and intricate systems critical to port operations
- Security, be it civil or military, our SCEC endorsed consultants address all aspects of security in what can be a complex physical and operational environment
- Consideration of large sites and expensive systems reticulation infrastructure. This may manifest itself through carefully structured combination of systems such as water for dust suppression and fire systems
- Detailed knowledge of servicing requirements for vessels undergoing maintenance, from 60Hz power supplies through provision of temporary ventilation systems.





A sustainable port of call

At NDY, sustainability is in our DNA. It's not an 'add-on' but an intrinsic part of everything we do. We're committed to delivering infrastructure that contributes to a sustainable future – because we know that sustainability is not only better for our cities and communities, but also for our clients.

At NDY, we practice what we preach. We have attained global ISO14001 accreditation, we report annually on our own corporate sustainability initiatives through the Global Reporting Initiative (GRI) framework, and our offices are either certified or registered for Green Star and NABERS ratings.

In a land bound by sea, efficient ports are essential to the Australian economy. Efficient ports minimise the carbon footprint of export and import operations, while maximising the economic return to investors.

Ports are also places for people to enjoy – and NDY understands how to balance economic imperatives with ecological and social needs. NDY's sustainability specialists can deliver design and engineering approaches that:

- Automate processes, such as mechanical stacking and loading
- Improve the reliability and resilience of security and operational systems
- Collect data to support better decisionmaking
- Reduce operational expenses
- > Protect natural capital.

We've helped our clients achieve significant financial savings by addressing operations issues – from energy and emissions minimisation to water conservation, and from waste management to noise reduction. And we continue to develop efficient, cost-effective solutions that deliver on the 'triple bottom line' of environmental, economic and social sustainability, and leave a legacy of places that enrich the lives of all Australians.

NDY ports experience

For more than sixty years NDY has provided consulting engineering services on strategic projects throughout Asia, Australia, Canada, Europe, New Zealand and the UK.

These award-winning projects are testament to the quality of our innovation, expertise and personnel. The following examples of our experience are a snapshot of our ability to deliver world's best practice for master planning projects of all sizes.

To view a comprehensive outline of our project experience visit our website **www.ndy.com**

APPT A



Australian Marine Complex Henderson, Western Australia

Services:

- Communications
- Electrical
- > Fire
- Hydraulics
- Mechanical
- > Power
- Security

About the project:

CUF Wharf Expansion

NDY were initially appointed as the services engineers and project managers for the advance works package to accommodate upcoming Naval ship refits. The works required implementation of completed power, water and fire systems in stages to suit Naval berthing commitments.

This fast-tracked project required innovative approaches to design and contracting strategies to ensure our client's ship fitout requirements were met. Innovations included the provision of temporary housing of a power conversion plant in a seatainer to achieve berthing deadlines.

NDY has since been engaged in master planning of overall site services provisions, design and documentation of all services associated with the eastern expansion program, HV power upgrades to the entire complex (including negotiation of zone substation requirements), plus provisions for other staff amenities and maintenance facilities.

Service and Supply Base

As part of the AMC Common User Facility, a new service and supply base was constructed to facilitate and assist the logistical operations for the Gorgon project.

This staging area was constructed for the shipment of facilities to the Barrow Island Plant. The new facility comprises a Service and Supply Wharf with berth for stern ramp-off vessel and mooring dolphin and associated services, hard stand and trailer staging area allowing for containers to be stored and prepared for shipment, wash down area, prefabricated transportable guardhouse, prefabricated transportable offices, as well as staff amenities.

This fast-tracked project required innovative approaches to design and contracting strategies to ensure our client's ship fitout requirements were met.



Princes Pier Restoration Port Melbourne, Victoria

Services:

About the project:

 Architectural Lighting (NDYLIGHT)

- Electrical
- Fire protection
- Hydraulics
- Mechanical

Princes Pier located in Port Melbourne Victoria, was redeveloped by Major Projects Victoria in 2011 to return the disused structure to the community as a vibrant and flexible open public space. NDY provided professional services for mechanical, electrical, specialist lighting, fire and hydraulics services to facilitate a traditional design, tender and build procurement strategy.

A key project innovation involved providing the heritage Gatehouse building with sea water cooling to facilitate a fully air conditioned building without the use of air cooled condensers that are susceptible to corrosion in the aggressive marine environment.

Through careful planning and design, the project was able to deliver modern and flexible services solutions to a heritage building located over open water. The technical challenges involved in the project can not be understated. The pier lighting design makes extensive use of LED technology and dual switching Cosmopolis lamps for flexibility and energy conservation.

NDY produced a Building Information Model which integrated the refurbishment activities of approximately 2000 structural piles as well as services related information. As a result of this refurbishment Princes Pier is now a jewel of the Melbourne foreshore.

Through careful planning and design, the project was able to deliver modern and flexible services solutions to a heritage building located over open water.



ASC West Submarine Support Facility Henderson, Western Australia

Services: Acoustics

Electrical

Hydraulics

Mechanical

Security

Fire

Communications

About the project:

As part of the overall defence maintenance capability, ASC Pty Ltd required a dedicated facility to house submarines, allowing maintenance to be undertaken in a secure and protected environment. NDY were commissioned to work on the project from concept through to completion.

The maintenance facility features an external hardstand area to accommodate and prepare a submarine before it enters the 9,000 sq m shed and workshop. It also includes a two floor office building plus ground floor workshop, amenities blocks and a separate storage warehouse. The entire maintenance facility is surrounded by secure fencing, with a separate guardhouse located at the entrance.

The building services design incorporated air conditioning, ventilation, industrial gases, high voltage reticulation, power distribution, general and security lighting, DC power supplies, AC power converter and classified communications including restricted/secure networks.

Hydraulics services include saltwater cooling systems to keep the submarines cool throughout maintenance by pumping water from the ocean to the workshop.

SCEC endorsed security consulting included design of security systems and advice to the design team on all aspects of security for the facility. Perimeter security measures were designed to secure the site to a level suitable for accommodating major defence assets and includes fencing, detection and CCTV systems.

Perimeter security measures were designed to secure the site to a level suitable for accommodating major defence assets.



BAE Systems Australia Defence - Facilities Upgrade Williamstown, Victoria

Services:

Acoustics

- Communications
- Electrical
- Fire Engineering
- Fire Protection
- Hydraulics
- Mechanical
- Power
- Security

About the project:

NDY were involved with the Hansen Yuncken team on the upgrade of the Williamstown shipyard facility for BAE Systems Australia Defence Pty Ltd.

- With the award of a major contract to BAE Systems for the build of module blocks associated with three new Hobart Class Air Warfare Destroyers, there was a requirement for the existing site infrastructure and services to be augmented to facilitate the build of these new ships.
- Within a demanding time line, NDY worked very closely with the team to assess and develop innovative design solutions to allow the client to meet very tight deliverables for the hand over of site infrastructure to allow BAE Systems to proceed with the build of the new ship module blocks for the Destroyers.

NDY were involved in the development of this project, producing detailed concept designs and coordinating with the nominated contractors and plant suppliers covering the following:

- Upgrade of the site high voltage infrastructure to accommodate new buildings and additional loads
- Four new substations to serve existing and new buildings
- Low voltage systems, lighting and power distribution
- Extension of the fibre optic and copper backbone communications network and the integration of CCTV security systems and intelligent energy metering to all new build areas
- New construction halls incorporating electrical and mechanical services systems for the construction of the module blocks

- The establishment of a new Block Blast Facility for blasting and painting the ship modules
- Integration of new production panel and welding lines within existing buildings and modification of exhaust systems and production gases (welding, oxygen and natural gas)
- Services associated new plant including paint facilities, blast facilities and overhead gantry cranes
- > Modifications to external pier and wharf services
- Evaluation of Fire Engineered solutions for the new buildings to comply with Australian and NFPA requirements
- Hydraulic services modifications and relocation of production waste water tanks
- Building services modifications to existing site accommodation buildings.



Utah Point Berth Port Hedland, WA

Services:

> Fire Protection> Hydraulics

About the project:

The Utah Point Berth project involved the design of the dust suppression system for an iron ore stockpiling and exporting facility in Port Hedland. Ore is transported and stored at the stockpiling facility in 18 meters high by 1.4 km stockpiles until the required ship is at the wharf. The ore is then transported via a conveyor network to the wharf and loaded onto the waiting ship.

The project involved the design of an automated stockpile and dump point dust suppression system, the water supply for conveyor transfer stations, conveyor wash boxes, mobile reclaim hoppers, stackers and the shiploader dust suppression system. The dust suppression system utilises a series of water cannons and sprinklers throughout the materials handling process that maintains dust extinction moisture levels and prevents windborne dust from affecting nearby towns. The system is fully automated via remote weather sensors, proximity sensors and solenoid actuated valves. The control was integrated into the site control system.

The fire hydrant and dust suppression system pipework was integrated, eliminating the need for separate pipework and storage tanks. Due to the scale of the site, this reduction of pipework had a significant impact upon capital expenditure for the project. We believe that these two systems have not previously been combined in a similar application. Spreadsheets were developed to model water usage on site, to size the water storage tanks and maximise the utilisation of recycled water. They were also adopted to minimise the required water input into the system, reducing the headwork's charges.

Through the implementation of NDY's innovative design solutions, the system was able to be optimised resulting in substantial cost savings for the client.

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