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The Port of Brisbane: Operating a Port in an Area with High Environmental Values

Abstract

The Port of Brisbane, close to the rapidly growing city of Brisbane, is the third busiest container port in Australia. Given that both the channel and port facilities are within, or adjacent to, areas of high environmental value, the Port of Brisbane has recognised that a demonstrable commitment to environmental management is required to operate in an environmentally sensitive area. Ports in such situations must place a high emphasis on the environment, if they are to be sustainable and increase their trade. This approach, while resulting in initial increased internal costs, is far more cost effective in the long term than an approach that relies on impact remediation and restoration activities.

Environmental policies, management systems, monitoring, reporting, and community consultation have become essential for a successful port to be able to effectively accommodate and promote the increase in trade associated with globalisation.

Introduction

The Port of Brisbane Corporation manages the third busiest container port in Australia on the shores of Moreton Bay adjacent to the rapidly growing city of Brisbane (Figure 1). Trade through the port is increasing markedly and, in 2002, the port had a container throughput of nearly 500,000 teus and a total tonnage 23 million tonnes. Key trade products moving through the port's eight deep-water container berths and three deep-water bulk berths include oil, coal, cereals, meat products, fertilisers, cement, cotton, chemicals transport equipment, motor vehicles, timber, and building products.

Shipping access to the hub of the port's activity, the Fisherman Islands complex at the mouth of the Brisbane River, is via a 90-kilometre shipping channel

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(dredged to a minimum of 14 metres) through a series of shallow sandbanks associated with Moreton Bay. Both the channel and port facilities are within, or adjacent to, areas of high environmental value.

Moreton Bay is a Marine Park, and contains populations of rare and endangered marine fauna, such as turtles, dolphins and dugongs, and wetlands of international significance recognised under the Ramsar Convention. The extensive areas of wetlands (mangroves and seagrass beds) are in good condition, and are protected from disturbance by legislation.

The public holds the environmental values of Moreton Bay in high regard, and any disturbance is considered to be of great concern. Additionally, the Bay has



Figure 1. The Port of Brisbane, located at Fisherman Islands at the mouth of the Brisbane River, is closer to the Asia-Pacific Rim than any other major Australian capital-city port, being up to five sailing days closer to Asia than the ports of Sydney and Melbourne.

substantial use for recreational activities, and supports large and productive commercial and recreational fisheries. The Brisbane River also contains areas of environmental significance and is currently the subject of a broad range of environmental enhancement projects associated with an urban renewal trend along the riverfront.

The primary role of the Port of Brisbane Corporation is to provide the necessary port infrastructure within this environmental/social setting, to encourage trade growth through the planning and development of new facilities, and maintenance and management of existing facilities. The Corporation also leases and manages extensive areas of waterfront land (500 ha) along the Brisbane River for port-related purposes, such as container parks, distribution centres and bulk storage facilities. Over the past 20 years, over AUS\$780 million has been invested in infrastructure and assets (Figures 2 and 3).

THE IMPORTANCE OF ENVIRONMENTAL ISSUES

As port managers, the Corporation has recognised that it now needs to take into account environmental issues

Figure 2. Aerial view of Fisherman Islands, looking towards Moreton Bay.





Figure 3. Aerial view of Fisherman Islands, looking back towards the city of Brisbane. In the foreground, the current reclamation area is divided into paddocks, where dredged material is pumped to reclaim land.

to a far greater extent than has occurred in the past, due to community, regulatory and business pressures. Community values and expectations, from an environmental perspective, have changed markedly over the past few decades, and at present a high level of importance is placed upon protecting the natural environment. The port's operations now have significant potential to be constrained if perceived to be in conflict with those environmental and social values that the community associates with the Brisbane River and Moreton Bay.

Environmental and social issues are therefore now crucial to almost all aspects of the Corporation's business. If such issues are not managed appropriately, they could limit current port activities, prevent port expansion (eg. prevention of channel deepening resulting in ship draft restrictions), or result in a need for potentially unnecessary environmental monitoring.

Restrictions to port operations could be of great concern. Australia has a high reliance on ports considering its island status, reliance on export of bulk agricultural/mining products, significant distance from major trading partners, and high cost of airfreight. Inappropriate restrictions on port growth and operation would have major detrimental effects to both regional and national economies. Over 25,000 vessels visit Australia every year, carrying AUS\$180B of trade,

with a rapidly increasing proportion occurring through the Port of Brisbane. Exports are anticipated to increase by 50% over the next eight years. Consequently, efficient port management and expansion is crucial in ensuring the growth and viability of the Australian economy.

KEY MANAGEMENT APPROACHES

The Corporation has recognised that environmental regulation is only likely to become more complex, and that ports need to become more accountable and must demonstrate a high level of environmental performance to ensure community support. Consequently it views environmental issues as an integral part of its day-to-day operation, aims to do more than meet government regulations, and seeks to stay ahead of any proposed legislation and community expectations. The key elements of the Corporation's approach to operate successfully in an area of high conservation value include the following.

Environmental policy

The Corporation has clearly defined its environmental policy that guides its approach to business. It was formulated and adopted by the highest level of port management, and is updated regularly to account for technological and community changes. It describes how the Corporation aims to exceed legislative



Figure 4. Fisherman Islands provide habitat for a range of birdlife. Left, Ospreys return to this nest on Fisherman Islands every year. Right, Pied Oystercatchers frequent the reclamation paddocks.

requirements and strive for “best practice” in all of its operations.

Environmental Management System

Under the EMS, all aspects of the Corporation’s operations are subject to an environmental risk assessment, and management actions are identified to address those of highest risk. Specific schedules, budgets and responsibilities are defined for each action. Activities of lesser risk are prioritised taking into account regulatory and budgetary issues.

The EMS was certified to ISO 14001 in May 2000, when the Corporation became the first port manager in Australia to be certified to this international standard. Since then, the Corporation has undergone regular independent external surveillance audits, which have verified our continuing adherence to the standard.

The presence of a benchmarked, independently audited EMS provides a level of confidence for regulators, the community and business partners. It provides a basis to ensure that any new development activities will be managed in an agreed manner, and that there is a system of “checks and balances” for regulators to be able to verify that appropriate management practices have indeed been implemented.

Monitoring and reporting

The Corporation places a considerable emphasis on monitoring the effects of its operations on the surrounding environment. Key monitoring activities relate primarily to water quality (e.g. stormwater, groundwater, dredging effects) considering the port’s proximity to the Marine Park, but also include the health of nearby wetlands, bird populations, energy usage, waste management, dust, and oil spills. The Corporation now holds detailed information on the environmental status of, and impacting processes to, environmentally

significant areas within and adjacent to the port.

Researchers and government regulators now come to the Corporation to seek environmental information on the port region. This situation clearly elevates the status and perceptions of the port, as well as providing the Corporation with the capacity to quickly identify any potential impacts before they become an issue.

In 1999, the Corporation was the first port manager in Australia to publish an Environmental Performance Report and, since then, it has continued to refine its environmental reporting process. These reports provide a basis on which the community can assess how the port is operating and the potential impacts of its operation, and enables the community, via an enclosed feedback card, to comment on the management achievements.

In 2002, the Corporation made its first formal foray into reporting on its triple bottom line, and believes that it now has tailored environmental, social and economic indicators that best reflect the particular performance demands of operating a seaport immediately adjacent to a Marine Park.

Community consultation and port promotion

Environmental issues over the past few decades have become of much greater interest to the community. Many changes in government regulations relating to port operations have arisen directly as a result of concerns raised by community/conservation groups. Community consultation, therefore, forms a key component of environmental management. Individual ports must develop local partnerships with the general public and community groups. Key Corporation initiatives to promote its environmental performance, and facilitate feedback on concerns and issues include:

- regular environmental presentations to external stakeholder and interest groups;



Figure 5. The Port of Brisbane Visitors' Centre, opened in November 2001, is built on the shores of a four-hectare lake, which has become an important habitat for a variety of water birds.

- an environmental scholarship programme;
- a Community Consultative Committee;
- free tours of the port to school, community and seniors groups;
- television advertising describing our environmental initiatives; and
- a Visitors' Centre.

The Visitors' Centre (Figure 5) was built to showcase the port and its important role in the regional economy. It fulfils an educational role, and provides both a public facility and an epicentre for the port community. The Centre was designed to be both user and environmentally friendly, while integrating the building into the surrounding landscape. The building incorporates many features of sustainable building design, such as solar power, natural ventilation, energy-efficient lighting and water-sensitive design. Many of the features are subtle, yet have become the benchmark for developments at the port, aligning with the Corporation's ongoing promotion of sustainable building design.

Since the Centre opened in November 2001, it has had close to 30,000 visitors. It offers conference facilities, a 100-seat auditorium, a boardroom, an interactive interpretative display, a café, and an B la carte restaurant. The display explains the history and operations of the port, and environmental issues associated with the area.

The Centre is located on the shores of a four-hectare lake, which has become an important habitat for a variety of water birds. The lake also forms part of the port's stormwater management system, by providing a settling pond prior to the discharge of stormwater into Moreton Bay.

Environmental enhancement

The Corporation has initiated a series of environmental enhancement projects in conjunction with government regulators/conservation groups, which include:

- 12-hectare permanent roost site for migratory birds;
- construction of nesting platforms for raptors;
- a mangrove-transplanting project and sponsorship of revegetation projects;
- a Greenhouse Gas emission reduction project for the Corporation's dredging and motor vehicle fleets;
- award-winning nature vegetation landscaping on port lands; and
- substantial funding of marine research being undertaken by universities.

Conclusions

The Port of Brisbane has recognised that ports in an environmentally sensitive area need to become more accountable and must have a demonstrable commitment to environmental management. The Port Corporation has successfully implemented policies to guide its approach to its business and these have been adopted at the highest levels of port management.

They include:

- a frequently updated environmental policy;
- an Environmental Management System (EMS) including risk assessment and ISO 14001 certification;
- monitoring and reporting including an Environmental Performance Report;
- community consultation and port promotion, including a Visitors' Centre; and
- environmental enhancement projects.

These measures have been essential in shaping the Port of Brisbane into a modern port able to accommodate the increase in trade associated with globalisation.