

Planning the Port of Dover

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The port of Dover forms one end of the main ferry link between England and France. It is the world's busiest Ro-Ro port with more than 100 calls by large ferries every day. When the Channel Tunnel opened in 1994, the cross channel ferry ports were concerned that their trade would collapse and they all sought to diversify into other businesses. In reality, the smaller ports were hit hard but Dover's trade has continued to grow and the port has built new berths to handle the increase.

The 30 Year Master Plan

In 2004, Dover Harbour Board (DHB) decided that they were getting close to the end of incremental expansion and they commissioned Halcrow to develop a 30 year master plan for the port. The management and engineering team at Dover is very strong, and the contract was set up so that the plan was very much a joint effort between the consultant and the DHB team. This has worked very well through the development of the plan.

The Dover ferry operation effectively forms one end of a marine 'bridge' between the UK and France with the main trade being accompanied freight vehicles (trucks with the drivers on board) although private cars and coaches with passengers are also significant parts of the business. The master plan therefore had to look at the whole traffic flow as well as just the ferry operation.

Traffic forecasts

The study started with a detailed traffic forecast. The traffic through Dover is subject to frequent short term fluctuations but

issues such as European integration and possible UK road pricing initiatives will have a long term influence. A range of forecasts were developed to form the basis for planning.

The ferry operation

The majority of the ferries use berths in the Eastern Docks, accessed through the Eastern Entrance and with restricted manoeuvring space. A simulation model was developed to examine the movements of ferries in the whole harbour and this indicated a maximum safe limit of approximately 100 ferry calls a day into the Eastern Docks. This model was used to check the effects of changing safety rules as well as the ability of the system to deal with strong winds which increase the time to handle ships.

A recurring theme through the studies was the need to provide a robust system which can recover quickly from disruptions whether caused by weather, traffic problems or industrial action.

Terminal operations

The land side space in the Eastern Docks is very restricted and has to accommodate the security facilities as well as check in and marshalling areas. Detailed simulation was used to look at improvements in the traffic flows and check in procedures. The same model also looked at the effect of different types of disruption.

Road access

For traffic to reach the Eastern Docks from the nearest motorway it has to travel through the town, and any small disruption on



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this road brings the port and the town to a halt. This has been a problem for a long time and the capacity of the road is one of the factors that limit the capacity of the Eastern Docks.

Detailed improvements in the road system and trying to achieve a better balance between traffic using the M20 and the A2 were both studied, and DHB came up with a very imaginative scheme to build a holding area outside the town to act as a smoothing buffer for the truck flows.

Final capacity of the Eastern Docks

The marine, terminal and road capacities were all combined to give a range of dates on which the Eastern Docks would reach capacity and this was a major input to the plans for the expansion of large ferry operations in the Western Docks.

New facilities in the Western Docks

Once the Eastern Docks have reached capacity, DHB intend to build new ferry facilities in the Western Docks, which will first need major construction work and modifications to its existing uses. After an initial phase of planning with Halcrow, DHB has embarked on an extensive programme of public consultation, the aim being to provide better conditions for all who use the port and who are affected by its operations.

Conclusions

The Dover 30 Year Master Plan Study has been a good example of joint working on a complex study. Dover Harbour Board and Halcrow have worked together to make best use of the combined skills to provide a clear development plan for the future.

ABOUT THE AUTHOR



Since graduating from Cambridge University in 1972, **Richard Clarke** has specialised in the planning, design and project management of ports.

In 2002, he joined the Halcrow Group as Director of Ports, with particular responsibility for port planning, container operations planning and port simulations. He has worked in 16 countries, carrying out numerous master plan studies and being project manager for the development of container terminals, RoRo facilities, petrochemical installations and specialist terminals.

Richard has delivered papers on port planning and design at a number of conferences, focusing particularly on the use of established technologies in new ways to give gains in the areas of productivity, reduction of costs and reduced environmental impact.

ABOUT THE COMPANY

Halcrow is a multi disciplinary consultant firm supporting clients across a diverse range of disciplines including transportation, environment, water supply and management, business planning and maritime. With one of the largest dedicated maritime teams in the world Halcrow can address every aspect of a port or coastal project from initial planning to site management.

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