INTRODUCTION

Skagen Harbour celebrated its 100 years anniversary in July 2007. It has over the recent years been subjected to significant developments to keep up with a growing level of activity, and this trend is continuing for the future as well. In 2001 the harbour changed its status from being state owned to an autonomic entity owned by the local municipality. After this transition a master plan for the future development of the harbour was worked out, Skagen Havn (2003). This work identified the problem that the harbour did not at this time have available space on the harbour area for further development of on land industries, which was obviously a problem for its competitive position. As a consequence hereof a project, called the south western harbour extension, resulting in an extension of the harbour by 110,000 m² land and a large outer basin with 450 m of quay, was formulated.

Furthermore, numerous projects updating the existing harbour have been carried out, and further are on their way, following up on the recommendations given in the master plan. Among these are projects dealing with deepening of existing harbour basins and correspondingly renewing the quay structures to allow for the increased water depths. Some of these projects have already been carried out and more are planned for the future. This is primarily to facilitate accommodation of the growing fleet of pelagic fishing vessels supplying the large fishing industries in the harbour, to ensure the harbour can maintain its current position as the leading fishing port of the country.

Another major project inside the harbour is the construction of a state-of-the-art dry dock for the Karstensens Shipyard, which greatly enhances their ability to work on larger ships.

To assist the realization of these projects various background studies have also been carried out, to provide the necessary information for both the formal regulatory processing and for the owners and administrators of the harbour. These projects includes environmental impact assessments (EIAs) with respects to numerous aspects of the outlined projects, including the extension of the harbour, establishment of the dry dock, reclamation of sand for the land filling and depositing of dredged materials.

Furthermore, numerical modelling of the wave disturbance in the harbour, using models corresponding to the different project stages in the harbour development, have been carried to evaluate the consequences of the planned changes on the wave disturbances throughout the harbour.

The paper will give an in depth description of the various multidisciplinary aspects of the outlined projects related to the development of Skagen Harbour within the current decade.

CONCLUSIONS

Skagen Harbour is currently undergoing a very dynamic development, which gives rise to versatile and challenging jobs for the involved parties. The paper focus on presenting an interesting case of harbour engineering, giving examples of the wide range of disciplines involved.

REFERENCES