



Bridge Construction



Architecture



Oil and Gas



Tunnel Construction



Project Development



Harbour Construction

All-round worldwide builders

functional design netherlands

OUR MISSION

Advising clients for the realisation of major international projects and recognising needs in the construction world for the development and realisation of new innovative products.

OUR SERVICES

Project Development

FDN Group makes elaborated plans in collaboration with project developers. FDN fulfils the role of advisor. Some activities are: architectural and structural design, management, financial control and supervision of various construction projects as they are rolled out all over the world.

FDN also finds the correct partners in Europe such as financial institutions, and hotel and cruise ship terminal developers who are introduced to the main project developer.



Port & Cruise terminal



Cruise terminal



Tropical resort



Yacht harbour



Bridge High Speed railway Amsterdam-Paris



Artist's impression High-speed railway Bridge over the Hollandsch Diep
(Design of Benthem Crouwel Architects and Ove Arup & Partners international)

Resort



Hotel & Boulevard resort



Hotel plan resort



Masterplan

Bridge Construction

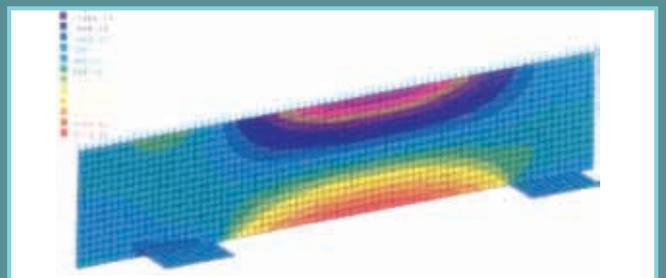
With regards to bridge construction FDN has build up a lot of experience through the years. Some of our experience includes: steel bridges, movable steel bridges, prefabricated and cast in situ concrete bridges and railway bridges.

Bridge High Speed Railway Line Amsterdam-Paris
FDN has been extensively involved in the preparations for the bridge over the Hollandsch Diep River, which is the longest and most talked about bridge on the entire high-speed train line within Holland. FDN has participated not only in the drafting of preliminary designs and specifications of the bridge, but was also responsible for an in-depth risk analysis on ship collision, traveller comfort as well as a 3-dimensional analysis on the effects of ship collision on the different pier foundation designs. The bridge of which the construction finished in 2008, has allowed FDN to acquire precious experience in all aspects of bridge design.

The structural engineers of FDN are able to make use of the newest FE modelling software during the design process in order to achieve a safe and high quality structure that satisfies all the requirements of the client.



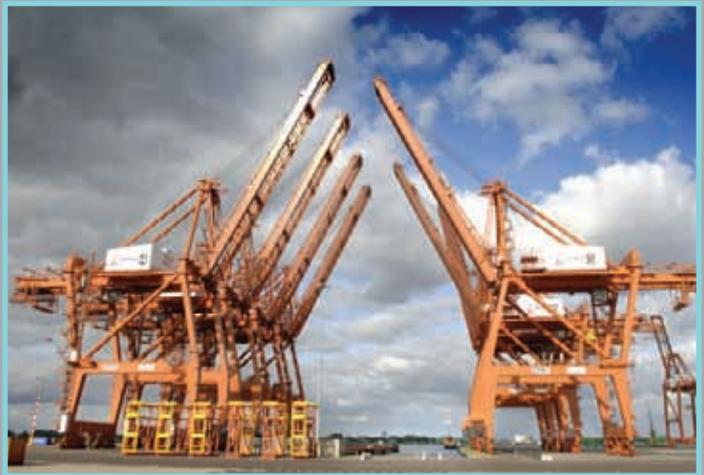
Bionic bridge



Finite element analysis bridge pillar



Dordtschekil tunnel



Container Harbour

Tunnel Construction

FDN performed the complete engineering of a bike- and pedestrian tunnel underneath the railway of Randstadrail. FDN was responsible for the entire design of the tunnel. The tunnel deck was built next to the railway and afterwards moved to its definite position in one day. This project provided FDN Engineering with a lot of knowledge about moving and/or sliding possibilities of a deck.

Dordtschekil

In assignment of 'HSL South-Holland-South' FDN has done research on the structural design of a tunnel for the high speed railway line.

Other Projects

Our expertise does not only lie in the engineering of structures above ground, but also in the foundation below. The need to support and retain the soil and water in temporary or permanent situations is very essential in Dutch engineering projects. FDN's experience in this field speaks for itself: pile foundations and piles (in 2D and 3D calculations), steel retaining walls, reinforced concrete retaining walls, combination retaining walls (sheet piles and tubes), harbour walls and quays, soil stability and settlement calculations.

Harbour Construction

Coal harbours, container harbours, yacht harbours and cruise terminals the FDN Group is specialized in the design of harbours, across the world, for large ships and exclusive yachts. Many governments and harbour authorities around the world are advised by FDN for realization of their projects. The Olympic yacht harbour next to the new Olympic stadium in Athens (2004) has been designed by FDN for our client Archimedes Floating Marinas.



Container Harbour



Tunnel Randstadrail



Harbour Santorini (Greece)



Bionic bridge



Reactor (Romania)

Architecture

The role of an architect has become a key ingredient in structural design. Furthermore, slenderness and architecture are important design criteria. FDN cooperates with world famous architects in developing iconic structures around the world. In collaboration with the project developer an architect is chosen depending primarily on the type of atmosphere which is required for the design.

Hotel Lake Palace, 2003

As per request of an internationally operating project developer FDN was responsible for the design of an innovative new hotel in the Amsterdam region.

From a market study of the hotel sector in Amsterdam the following was concluded:

- about 8 million hotel guests per year
- Amsterdam is ranked 4th on the list of most popular cities to visit in Europe
- the occupancy rate of hotel rooms in 2002 was 72%
- the average room price was Euro 128

A new hotel had to be situated centrally in Amsterdam and near Schiphol International Airport. This resulted in the design of a 80 meter high, 4 star hotel with 240 luxury double rooms, 10 suites and conference facilities for 100 persons. Unique in this design is the blue sky bar ("roof top" restaurant) with a view of the whole region. Innovative are the shape of the building and the use of integrated sun panels to produce the needed electricity.



Design Lake Palace Hotel

Oil and Gas

Civil engineering also deals with oil and gas structures. The FDN Group is also specialized in the oil- and gas industry. Companies such as Fluor and Jacobs have made use of the knowledge of specialized FDN-engineers. In collaboration they look for solutions to difficult problems.

Recently FDN Engineering was the lead engineer civil constructions of the largest refinery in Romania. And has also been responsible for reviewing the designs and providing assistance to local Romanian engineers that performed the design work. The construction cost of the project was 100 million euros. The structures included steel pipe racks, exchangers, vessels, reactor structures, heater structures and all foundations.



Heater Structure (Romania)

FDN Group



Dynamo Docks Europe

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