

Project:

# SHELLDESIGN ®

LOCATION:

Worldwide

YEAR:

2007 - 2017

CLIENT:

Dr.techn.Olav Olsen AS

SCOPE/PHASE:

Software development and verification

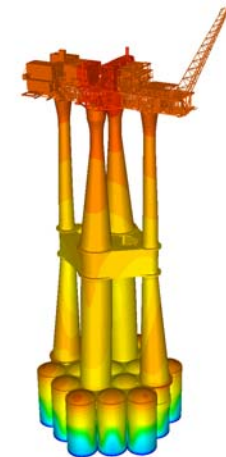
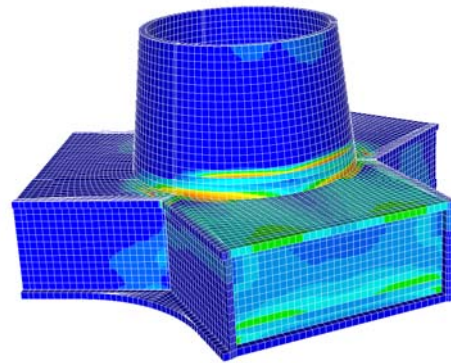
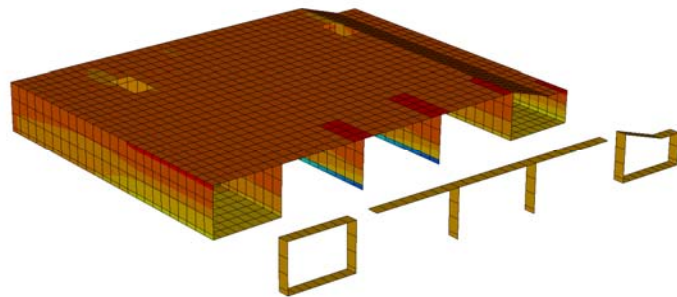
PROJECT RESPONSIBLE:

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PROJECT DESCRIPTION:

ShellDesign is a post-processor of results from Finite Element analyses for concrete design. The program efficiently handles large structures and large amounts of load combinations. Code checking of results can be performed according to relevant standards (Eurocode 2, NS 3473, DNV-OS-C502) and in all relevant limit states (ULS/SLS/ALS/FLS). The first versions of the program that today is called ShellDesign were developed by Dr.techn.Olav Olsen (OO) more than 40 years ago. Today's version of ShellDesign has been extensively used in projects by OO. The program is also licensed for external use to clients such as DNV GL.



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## **The Consistent Stiffness Method**

ShellDesign includes a specially developed procedure for performing non-linear FE-analyses of reinforced concrete structures, called the Consistent Stiffness Method (CSM). CSM works through a series of consecutive linear FE-analyses to include the effect of the highly non-linear behavior of reinforced concrete. Through use of the CSM, re-distribution of forces in the structure is allowed, resulting in an accurate prediction of the structural behavior and more economical designs.

## **Modified Compression-Field Theory**

ShellDesign supports the use of the Modified Compression-Field Theory (MCFT) for detailed assessment of structural stiffness and capacity. The MCFT offers a triaxial concrete material model which properly includes the tensile capacity of concrete and offers direct integration of transverse shear forces, as opposed to separated shear design approaches found in conventional design codes.