

SESAM TUTORIAL

GeniE

Parametric Semisub Panel Modelling

Valid from program version 8.2



Sesam Tutorial

GeniE – Parametric Semisub Panel Modelling

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Valid from GeniE version 8.2

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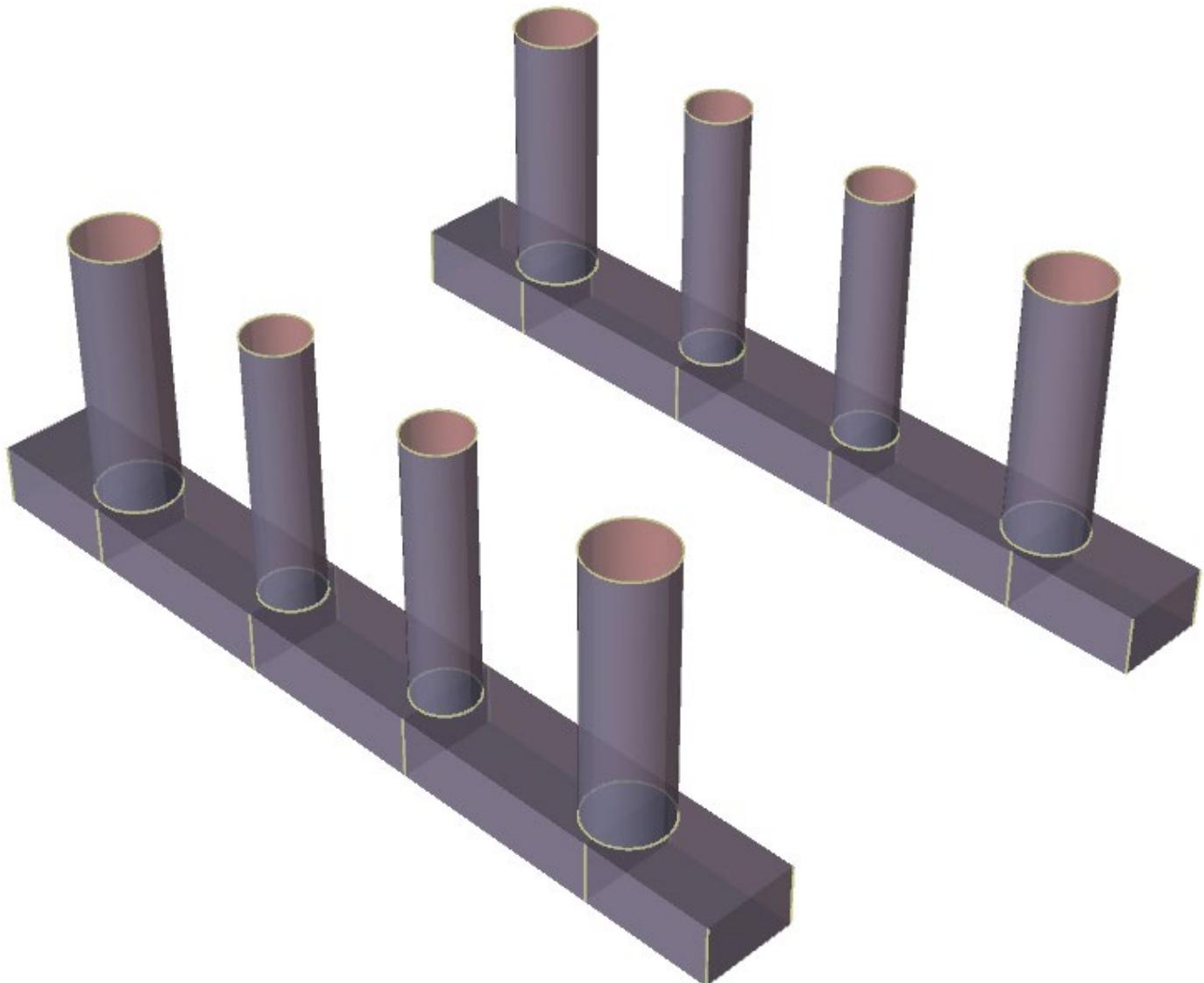
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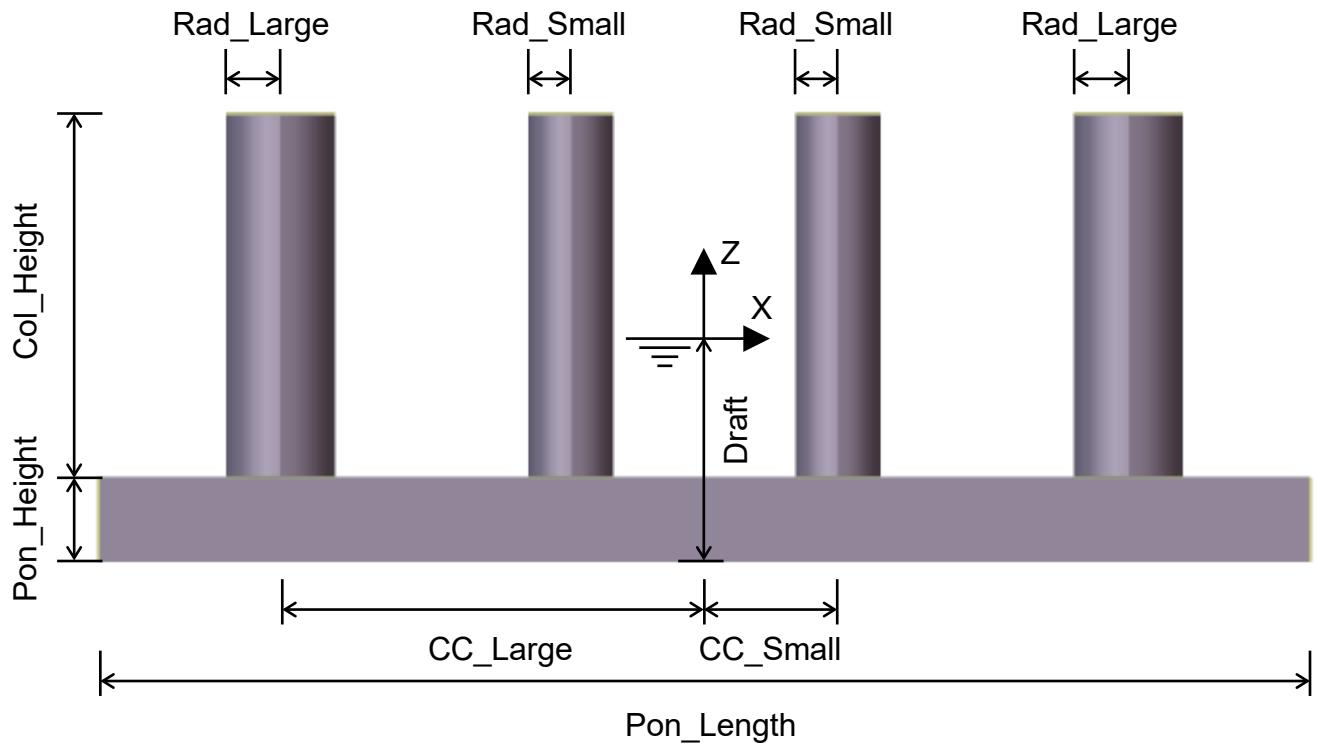
1 INTRODUCTION

- This tutorial shows how to establish and use a parametric input file (js file) for creating panel models of simple eight-column semi-submersibles of alternative sizes.
- The tutorial is based on the input file Parametric_Semisub_Panel_Model_Input.js that accompanies this tutorial.
 - The input file includes the semi-submersible main dimensions as variables. Editing these variables in the input file creates panel models of different sizes.
 - The semisubmersible panel model is stored as Semisub_Panel_T1.FEM. This file may be used in HydroD for stability or hydrodynamic analysis.
- This tutorial assumes basic knowledge in GeniE and the JavaScript command language. With knowledge in simple programming in JavaScript (logical tests and do-loops) even more advanced parametric input files may be created.

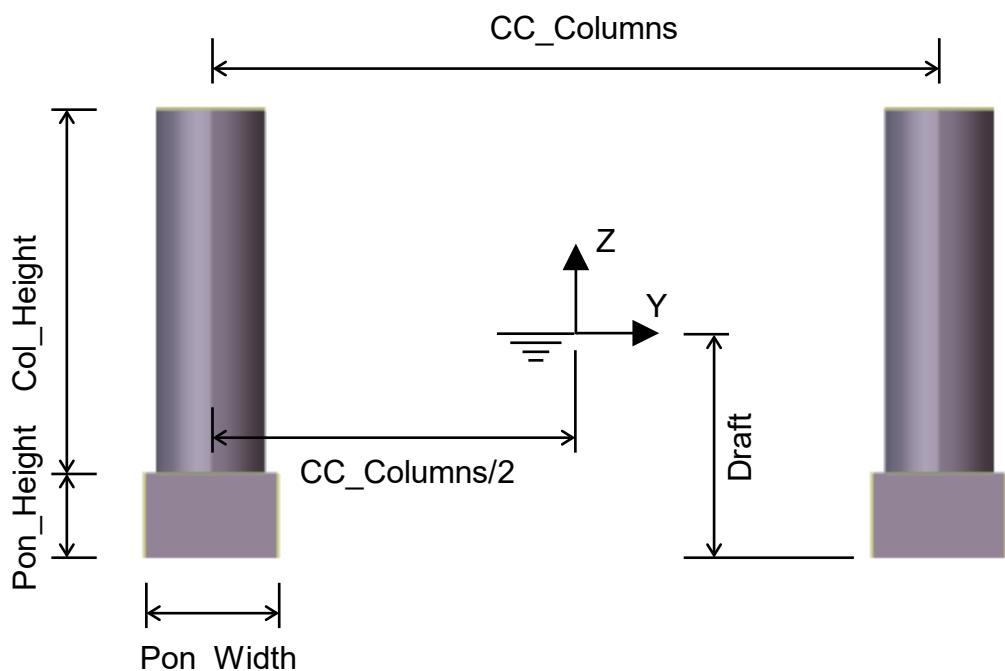


2 VARIABLES OF THE PARAMETRIC INPUT

- The dimension variables seen from the side:

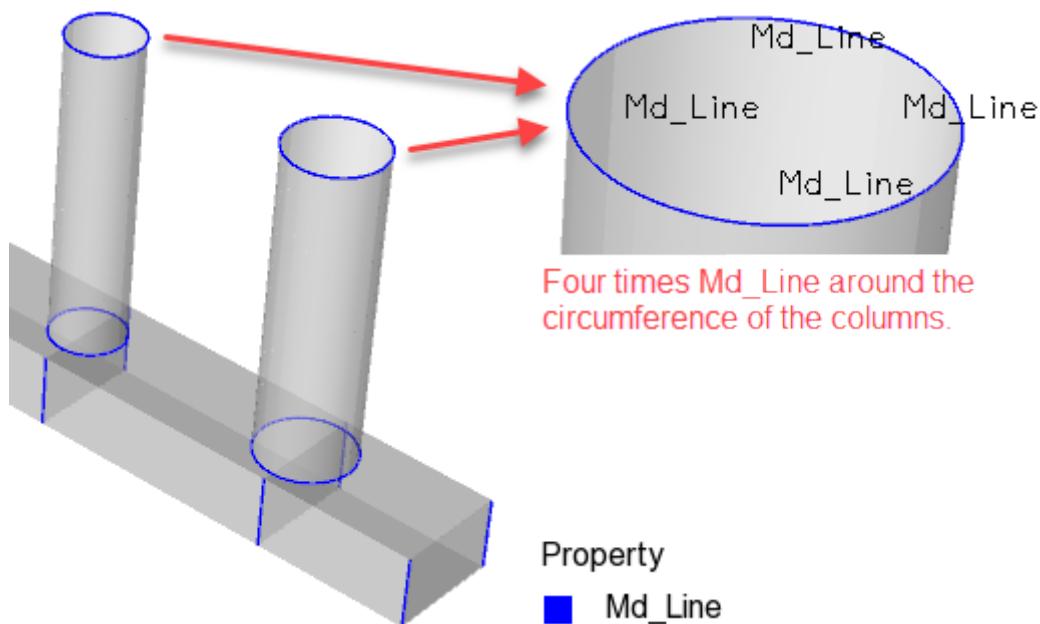


- The dimension variables seen from the front:

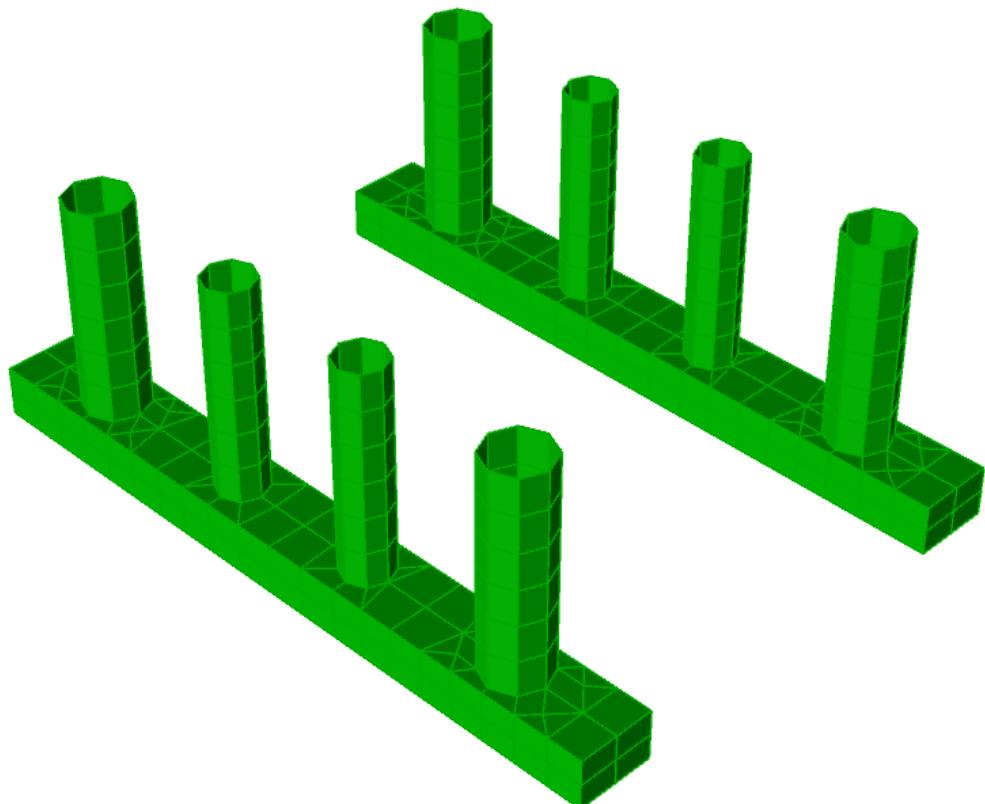


- In addition to the dimension variables there are two mesh variables for controlling the panel mesh:

- Md_Line – A *Number of Elements* property assigned to feature edges in the model. This controls the number of elements over the height of the pontoons and around the circumference of the columns as shown below.
- Mesh_Length – A value assigned to a *Mesh Density* property that is set as default mesh property. I.e. this property is assigned to all surfaces.

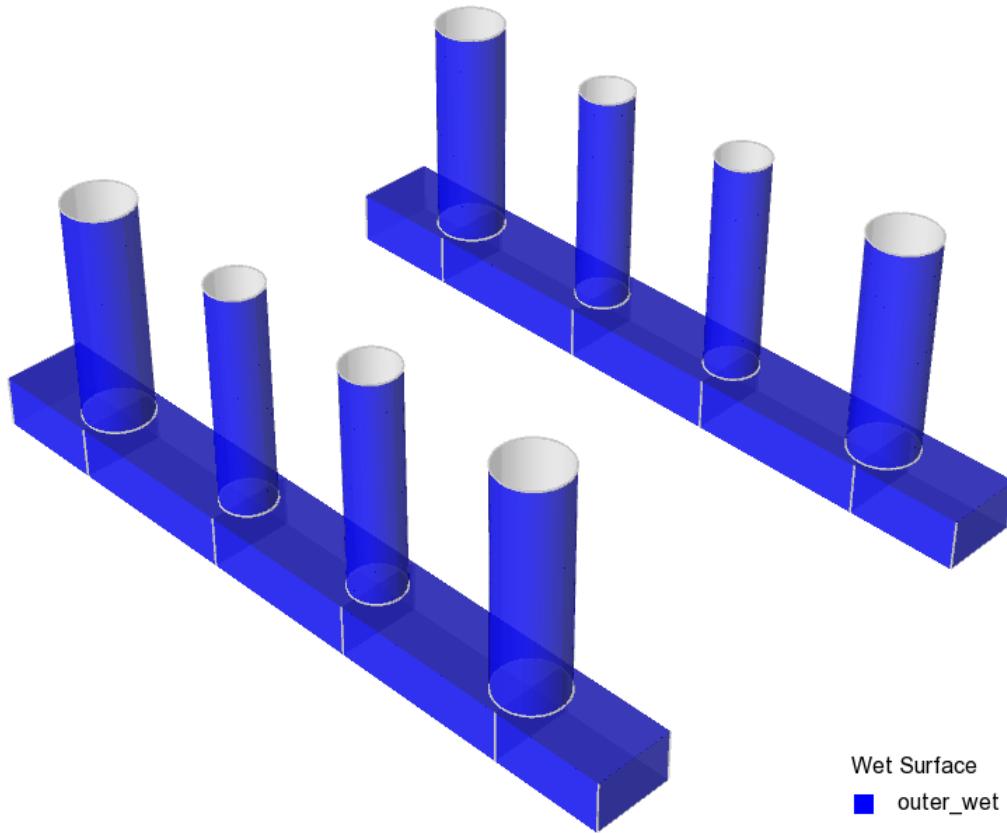


- Below the panel mesh is shown when Md_Line is set to 2 and Mesh_Length to 5 m.

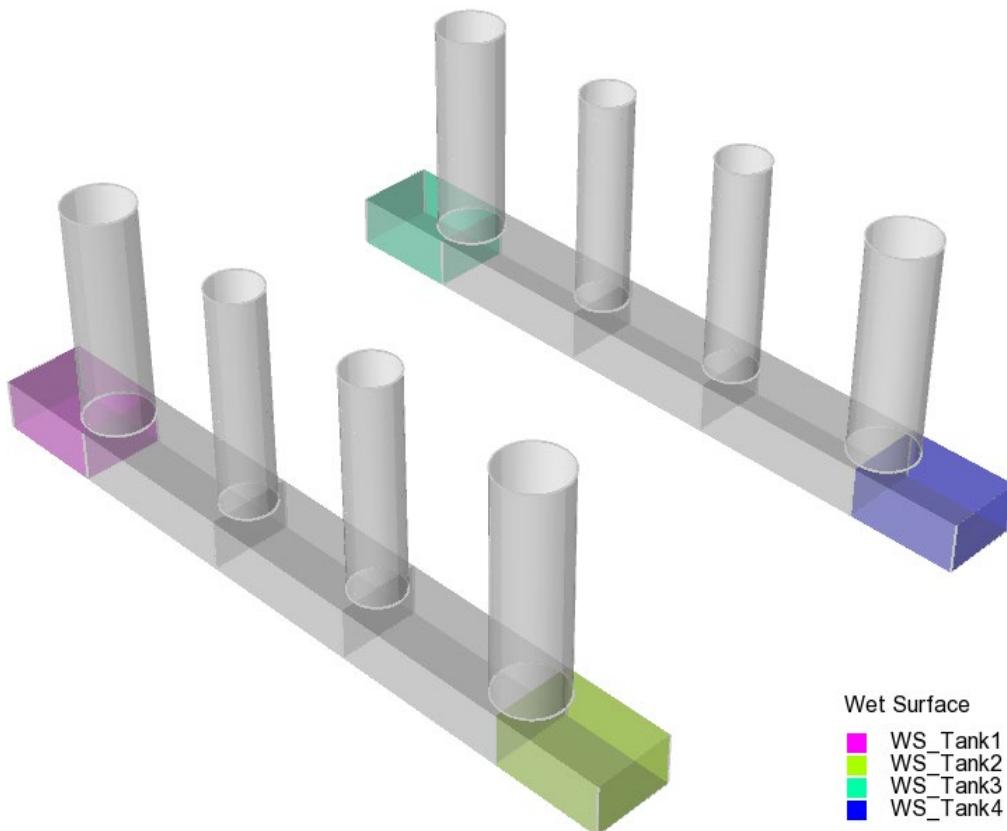


3 WET SURFACE AND DUMMY HYDRO PRESSURE

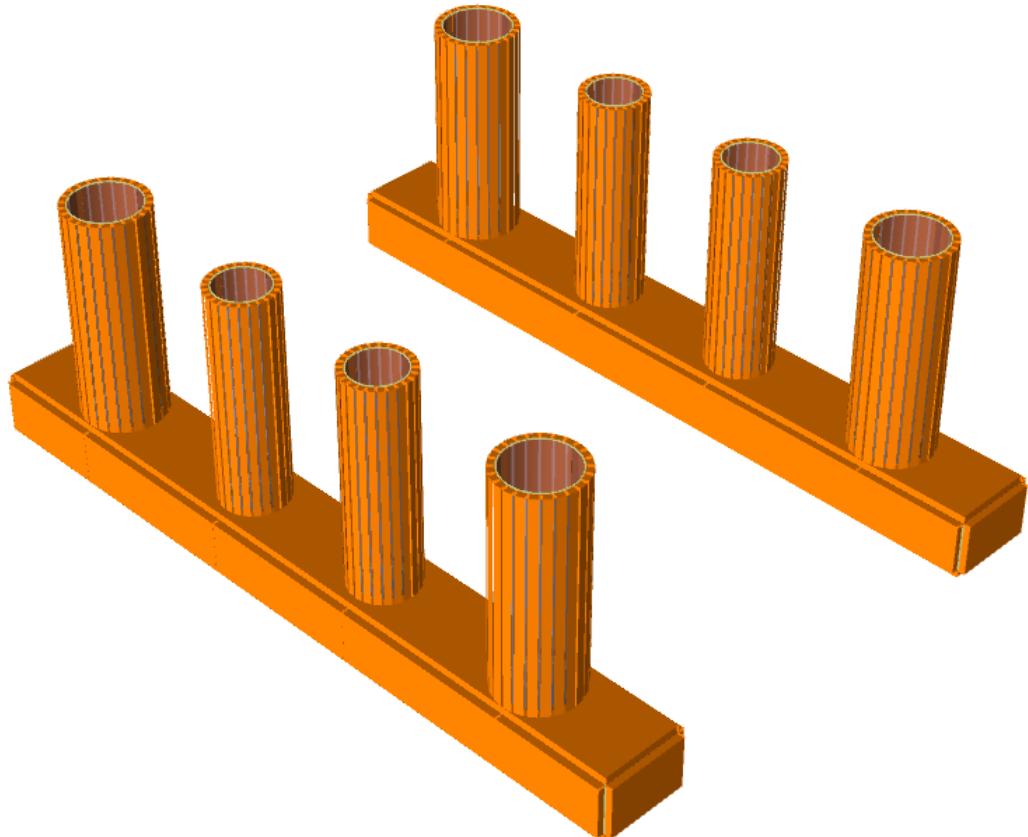
- Since this is a panel model for use in HydroD, a wet surface property is defined for the outer surfaces:



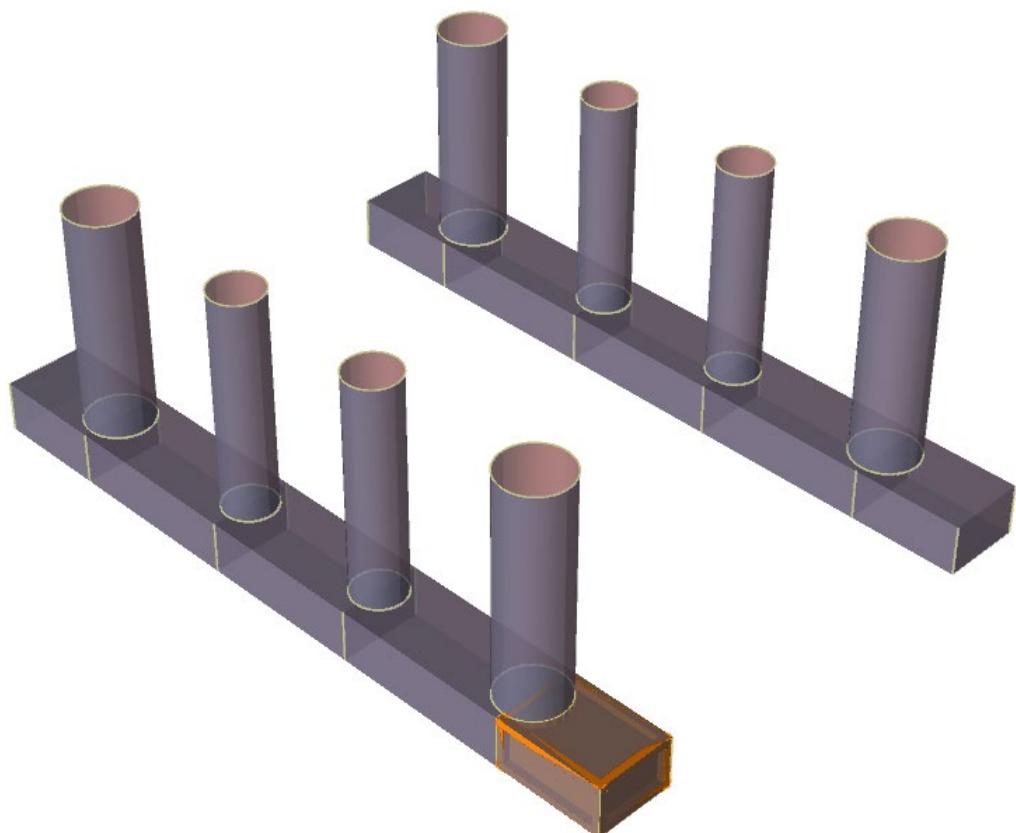
- Wet surface properties are also defined for four tanks:



- Dummy hydro pressure for the outer surface:

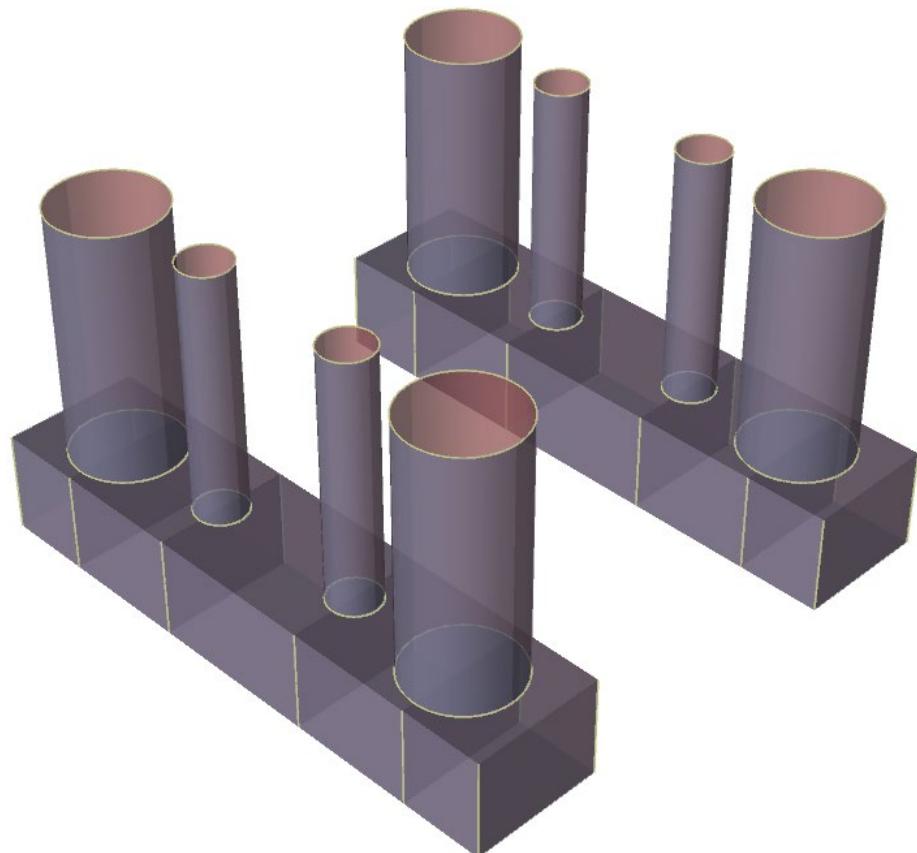
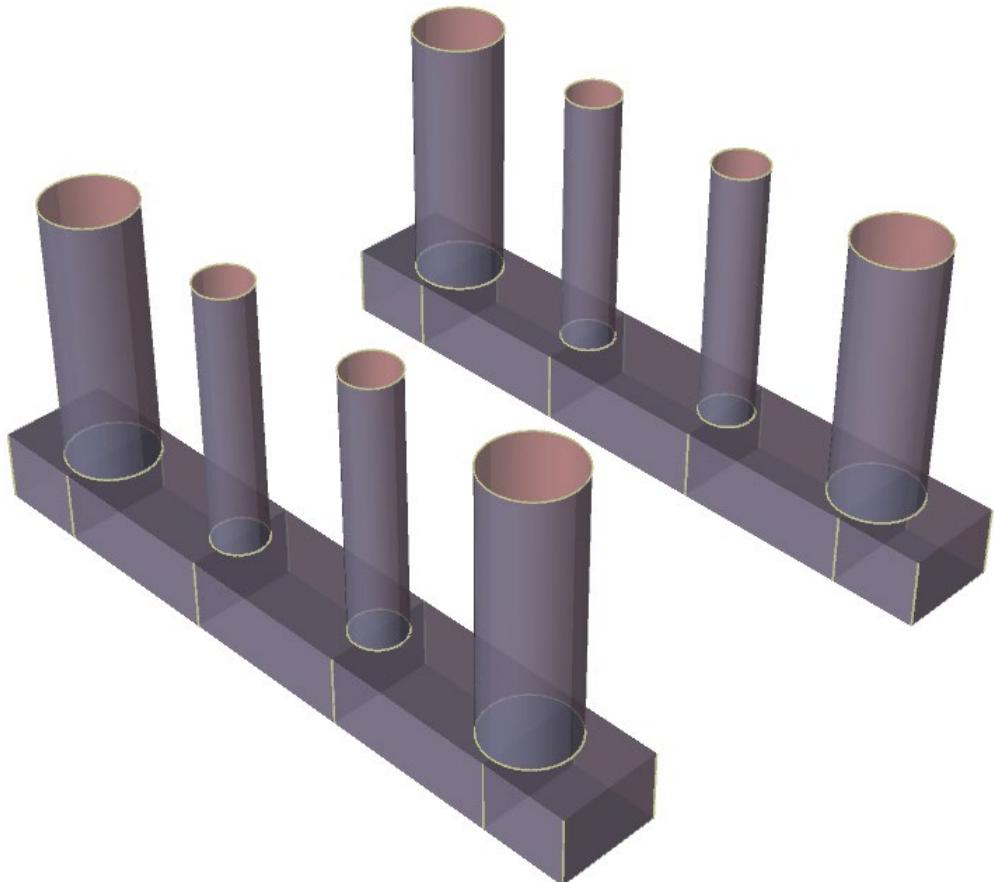


- Dummy hydro pressure in one of the four tanks:



4 ALTERNATIVE MODELS BY EDITING THE DIMENSION VARIABLES

- Below are shown two alternative models created by editing the dimension variables.



About DNV

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