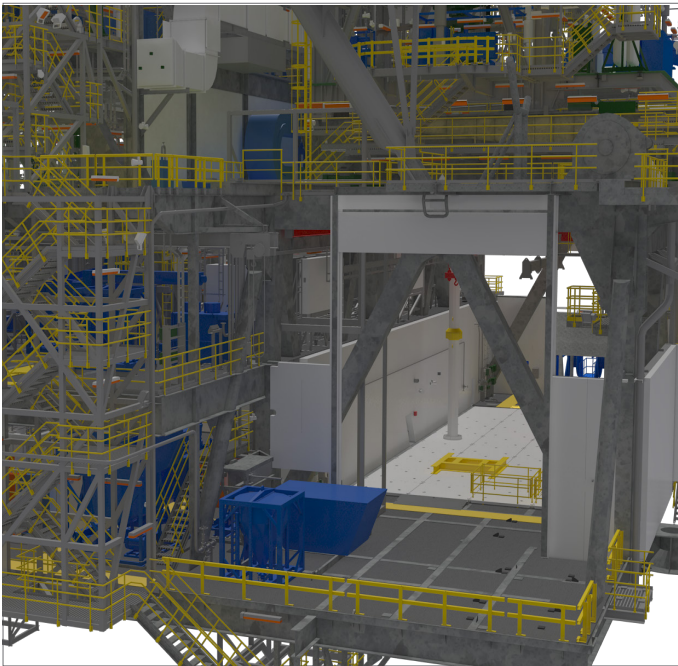


# Engineering Services

## Detail Engineering Fixed Installations



MHWirth 3D Max

### Designing Rigs and Solutions for the Future

- Detail engineering
- Design and documentation of optimal drilling concepts, functionality and operation
- System and area responsible for drill floor, substructure and moon-pool, derrick/ram guide, pipe, riser and storage decks, mud, bulk and treatment areas

### Capabilities

- Management, interface, change and weight control
- Multi discipline 3D modelling
- Drilling process, hydraulic and utility systems

Installation	Type	Remark
Grane	Jacket	EPC contract
Valhall	Jacket	EPCIC contract
Oseberg Sør	Jacket	DSM*
Oseberg Øst	Jacket	DES*
Visund	Semi	EPC, detail engineering for entire platform
Snorre A	TLP	DES/DSM including FEED
Snorre B	Semi	EPCI contract including separator module
Sleipner A	Condeep	DES/DSM
Sleipner Vest	Wellhead	Partnering contract
Heidrun	TLP	DES/DSM
Gullfaks A/B/C	Condeep	DES/DSM/pipe rack including FEED GFA

\*DSM= Drilling Support Module | \*DES = Drilling Equipment Set