

# Simon Dillenburg

## Curriculum Vitae

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### Personal Details

Year of birth 1984  
Nationality German

### Professional Experience

- 2019 – today **THEC Offshore GmbH**, Hamburg, Germany, Naval Architect, Founder.
- 2018 – 2019 **THEC UG (haftungsbeschränkt)**, Hamburg, Germany, Naval Architect.
- 2017 – 2020 **TÜV SÜD Industrie Service GmbH**, Hamburg, Germany, Naval Architect.
- Hydromechanics,
  - Wind turbine load analyses,
  - Coupled analyses of offshore wind turbines (bottom fixed and floating).
- 2012 – 2017 **Overdick GmbH & Co.KG**, Hamburg, Germany, Naval Architect.
- Project engineer, management of small projects,
  - Hydromechanics, global structural analysis.
- 2010 – 2011 **Ocean Engineering Research Center (OERC) at Memorial University of Newfoundland (MUN)**, St. John's, Canada, Lab technician / Trainee.

### Projects (extract)

- 2021 Multi-body marine analysis for a new wave energy converter type
- Project manager,
  - System optimization with respect to power output,
  - Analysis of loads and motion characteristics.
- 2021 Power barge hydrodynamic analyses
- Determination of ultimate and fatigue loads during transport of the power barge,
  - Quayside mooring design and analysis, assessment of the motion behaviour.
- 2021 Floating offshore wind turbine quayside mooring analysis
- Project manager,
  - Quayside mooring analysis,
  - Determination of limiting environmental conditions,
  - Calculation of mooring line loads and floater excursions.

- 2021 Deck lifting analysis
  - Project engineer,
  - Calculation of rigging loads and deck structural strength verification (API code check) during lifting operations.
  
- 2021 Floating jacket upending
  - Project engineer,
  - Buoyancy aid design and stability analysis for floating jacket upending
  - Calculation of rigging loads and jacket structural strength verification (API code check) during the upending process.
  
- 2020 Topside installation lifting analysis
  - Project manager,
  - Calculation of motion amplitudes and DAFs in time domain analyses.
  
- 2020 – 2021 Wreck removal project
  - Project engineer,
  - Mooring analyses,
  - Definition of environmental conditions limiting the removal operations.
  
- 2020 – today Floating offshore wind turbine
  - Project manager,
  - Intact and damaged stability,
  - Hydrodynamic mooring analysis,
  - Determination of structural loads,
  - Transport and installation analyses, simulation of ballasting process.
  
- 2020 – 2021 1:10 model scale floating offshore wind turbine
  - Project manager,
  - Hydrostatic stability and hydrodynamic mooring analysis of a scaled semi-submersible floating offshore wind turbine.
  
- 2020 – today Floating wind turbine analysis software development project
  - Project manager,
  - Assisting a major software developer in developing new additions to an existing marine analysis program to enable verification of floating offshore wind turbine structures.
  
- 2017 – 2020 Type certification, onshore wind
  - Project engineer,
  - Verification various wind turbine loads assumptions (GH Bladed).
  
- 2019 Multi-body marine analysis for the NEMOS wave energy converter prototype
  - Project manager,
  - Motion analysis, mooring and connection load analysis for a single point mooring system.

- 2019 Statistical estimation of weather windows
  - Project engineer,
  - Monte-Carlo simulations and weather down-time analysis based on given time histories.
  
- 2017 – 2019 Floating wind turbine certification
  - Project manager,
  - Verification of coupled load analysis (GH Bladed),
  - Verification of mooring and motion analyses,
  - T&I procedure review.
  
- 2019 Project certification, offshore wind
  - Project engineer,
  - Verification of offshore wind turbine loads assumptions. Major German turbine manufacturer (GH Bladed).
  
- 2017 – 2018 GBS offshore wind turbine prototype certification
  - Project engineer,
  - Verification of wave loading,
  - T&I procedure review.
  
- 2018 Lifting analysis for substation repair operations
  - Project manager,
  - Calculation of DAFs for a lift through splash zone.
  
- 2018 Project certification, offshore wind
  - Project engineer,
  - Verification of offshore wind turbine loads assumptions. Major German turbine manufacturer (GH Bladed).
  
- 2014 – 2017 Floating wind turbine design
  - Project manager,
  - Mooring and motion analyses, power export cable analysis, concept studies, geometry optimization, T&I procedure including cable installation, model test supervision, floater drag calculations (RANSE CFD), coupling aerodynamics and hydrodynamics with NREL's FAST (focus on hydrodynamic part; hydrodata obtained with Nemoh).
  
- 2015 – 2016 Cable lay analyses (various clients)
  - Project engineer,
  - Analysis of wind park inter-array cable lay and cable pull-in operations in shallow and medium water depths, mooring analyses.
  
- 2013 – 2016 DolWin Gamma HVDC Substation
  - Project engineer and deputy T&I project manager (2015),
  - Various hydromechanic transport & installation analyses (i. a. float-over), global structural analyses for intermediate phases during installation.

- 2016 T&I engineering for two gas platforms in the baltic sea
  - Project engineer,
  - Hydrostatics, motion analyses.
  
- 2015 Gas wellhead platform installation
  - Project engineer,
  - Mooring analyses, lifting analyses.
  
- 2014 Vessel resistance determination for a tugboat conversion
  - Project engineer,
  - RANSE-CFD analysis of a tugboat modified for shallow draft operation.
  
- 2014 Floating water injection feasibility study
  - Project engineer,
  - Mooring and motion analyses, assignment abroad in Kuala Lumpur, Malaysia.
  
- 2014 Mooring analyses for load transfer operations
  - Project engineer,
  - Mooring analyses, involvement in the process of operation approval, assignment abroad in Kuala Lumpur, Malaysia.
  
- 2012 – 2014 Costa Concordia Wreck Removal
  - Project engineer, on-Site and back-office engineering support,
  - Parbuckling simulation, weight control, various hydromechanic analyses (i. a. multi-body mooring analyses).
  
- 2012 – 2014 SylWin Alpha, HelWin Alpha and BorWin Beta HVDC Substations
  - Project engineer,
  - Various hydromechanic transport & installation analyses (i. a. mooring and float-over operations).
  
- 2013 Series of bridge section transport analyses
  - Project engineer,
  - Dynamic transportation analyses.
  
- 2012 Transport analyses for a number of lock gates
  - Project engineer,
  - Dynamic transportation analyses.
  
- 2012 Cable lay analysis project
  - Mooring analysis,
  - Cable lay analysis in the North Sea.

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## Education

10/2005 – 01/2012 **University of Duisburg-Essen**, Duisburg, Germany, Mechanical engineering with major field of study in naval architecture.

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## Skills

- Strong hydrodynamic skills,
- Determination of seakeeping characteristics of vessels and other kinds of floating objects (potential theory),
- Analysis of marine operations, i. a. mooring, cable- and pipe-lay, lifting, float-over installations,
- Programming skills (predominantly Python, i. a. for OrcaFlex automation),
- Intact and damaged stability assessments,
- Preparation of vessel documentation, e. g. stability booklets,
- Transport & installation procedures,
- Wind turbine load analyses.

## Software

Marine operations simulation	MOSES, OrcaFlex
Diffraction codes	MOSES, Nemoh
Hydrostatics	MOSES, DELFTShip
Global structural analysis	SACS, MOSES
Integrated load analysis	GH Bladed, FAST
Programming-languages	Python, Visual Basic for Applications
Office-application	Microsoft Office including Access and VBA
CAD and 3D modelling	AutoCAD, Rhinoceros

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## Languages

German	Native speaker
English	Fluent

Hamburg, July 18, 2022  
Simon Dillenburg