


BELWIND Offshore Wind Farm

- 9 March 2010 -



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BELWIND Wind Farm

Outline:

- **Scope of Works**
- **Project Organization**
- **Design of foundations**
- **Fabrication and transport of foundations (MP+TP)**
- **Storage Yard Zeebrugge**
- **Transport and Installation of foundations (MP+TP)**
- **Production and installation Infield cables**
- **Design and construction of OHVS and Booster Station**
- **Production and installation Export cable**

Scope of Work

Location:

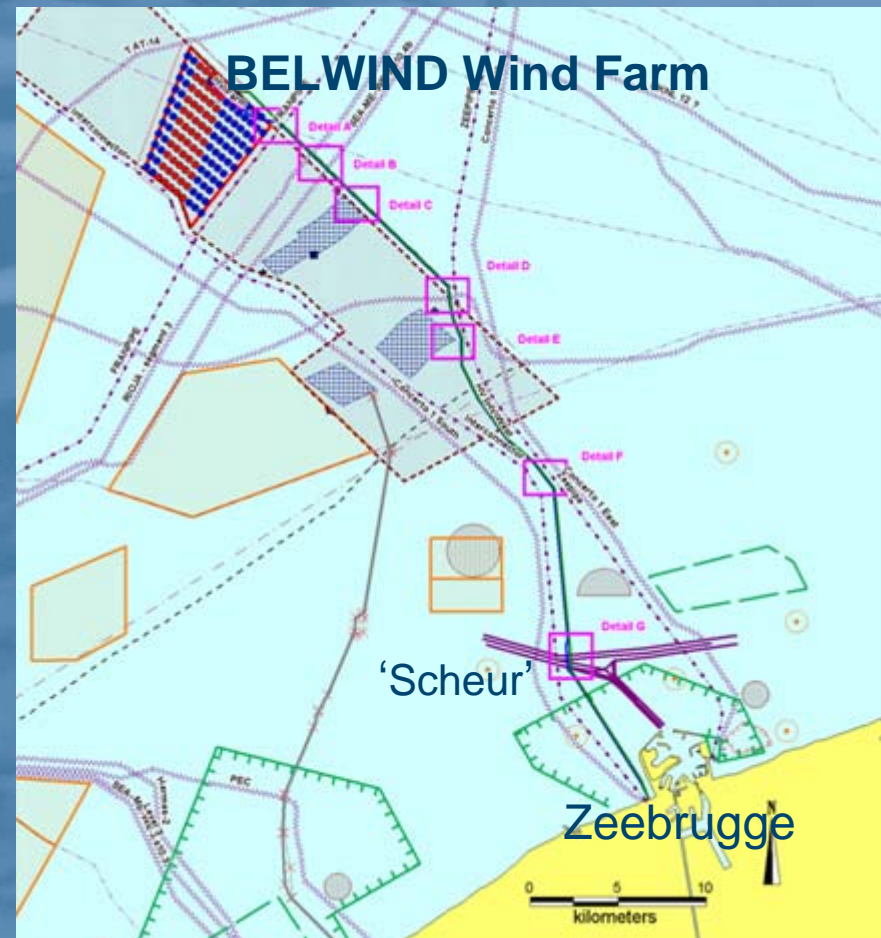
- 55 km offshore Zeebrugge
- 18-33m water depth

- 55 WTG Foundations
- 55 Wind Turbines
- Scour Protection
- Electrical Infrastructure
 - 1 OHVS
 - 55 Infield Cables
 - 1 Export Cable
 - 3 km Onshore Cable
 - Grid connection

Execution Period:

- Contract award July 2009
- Completion November 2010

Contract Value 280M Euro

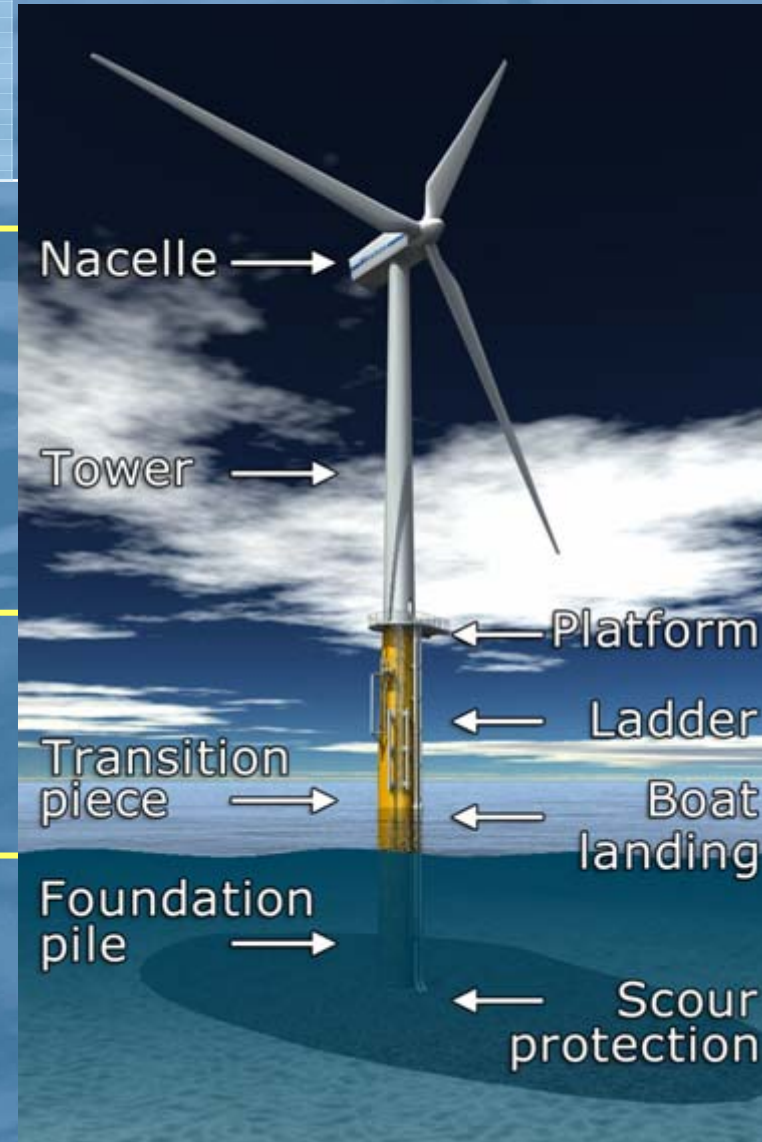


Scope of Work

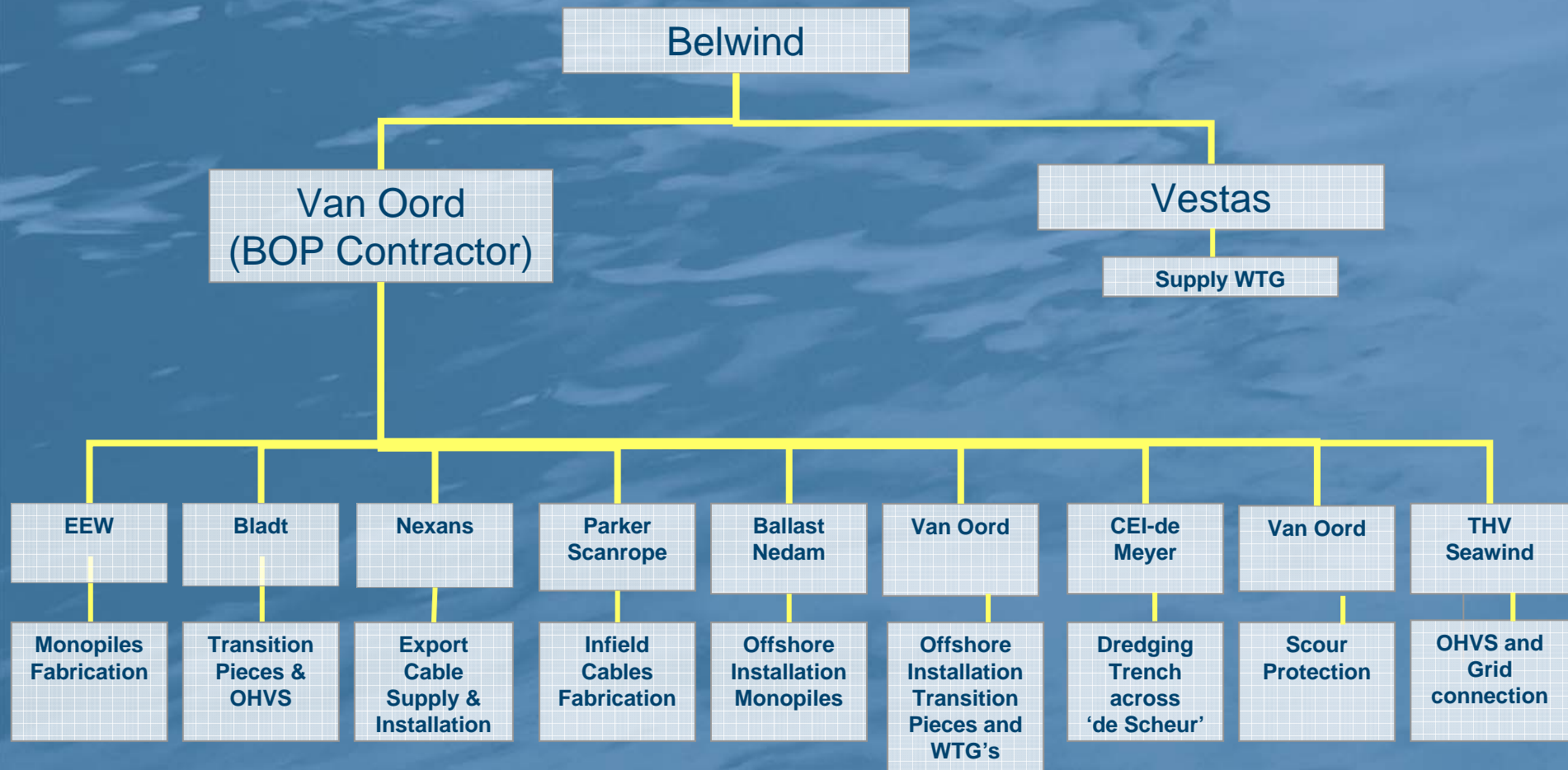
Wind Turbine Generators:
52m / 250t
Vestas V90 3MW

Transition Pieces:
25m / 160t

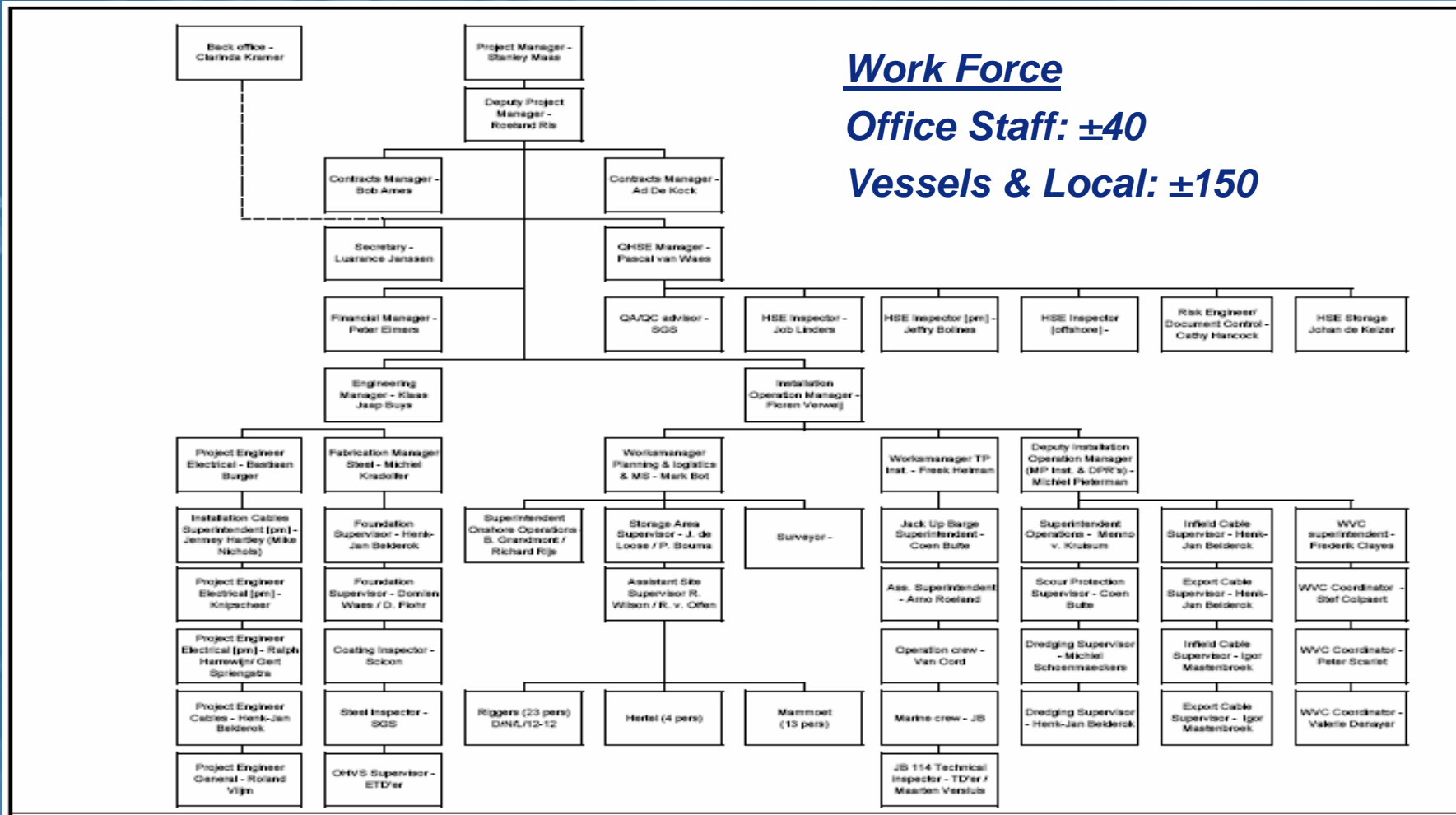
Monopiles:
40m – 65m / 250t – 500t



Project Organization



Project Organization



Design foundations

- Soil investigation
- Design primary steel
- Design Secondary steel
- Scour protection
- Certification

Fabrication Monopiles

MONOPILES:



Transport Monopiles to Zeebrugge

MONOPILES:



Load Out in Progress



Transport Monopiles to Zeebrugge



**3 Monopiles
en route to Zeebrugge**



Fabrication Transition Pieces

TRANSITION PIECES



Transport Transition Pieces to Zeebrugge

TRANSITION PIECES



**4 Transition Pieces
en route to Zeebrugge**



Storage and Handling Yard in Zeebrugge Port

Storage:

- 20 Monopiles
- 20 Transition Pieces
- Auxiliary Pieces



Assembling

Platforms TP



Load Out of MP and TP



Storage and Handling Yard in Zeebrugge Port



BEFORE

Storage and Handling Yard in Zeebrugge Port



AFTER

Float Out / Launch of Monopiles



**Launching First
Monopile 02/09/09**



Bottom Plug



Upper Plug

Tow Out of Monopiles



**Monopiles
en route to Offshore Site**



Installation of Monopiles



Docking of Monopile



IHC Hydro Hammer

IHC Up-Ending Tool

Installation of Monopiles by HVL Svanen



Transport and Installation of Transition Pieces by JB-114

JB-114 ready to load TP's

Monopile



Load Out of Transition Pieces



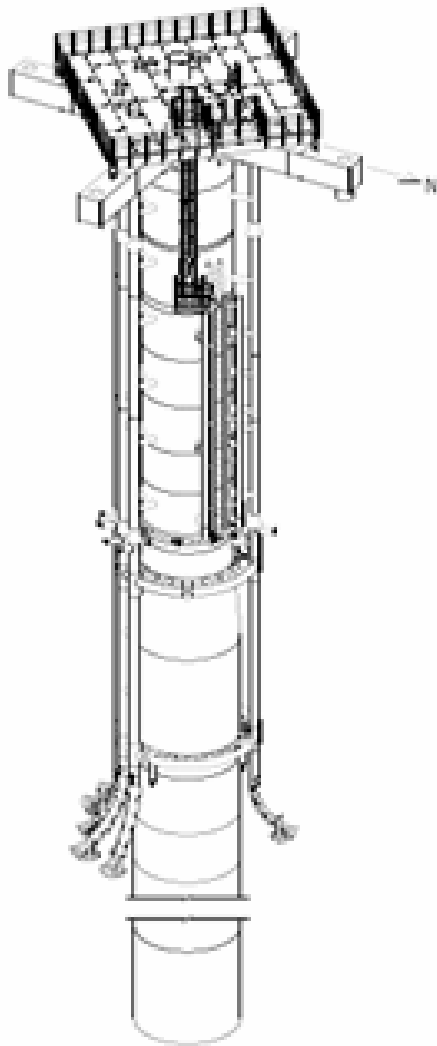
Installation of Transition Pieces



Installation of Transition Pieces



Construction OHVS Transition piece



OHVS Transition piece



OHVS Transition piece



Today's Progress Installation of MP's and TP's

MONOPILES



56

TRANSITION PIECES



56

Scour Protection (2010)



Picture from Q7 / Princes Amalia wind farm

Delivery Infield Cables



Installation Infield Cables (2010)

Picture from Q7 /
Princes Amalia
wind farm



Design and Construction OHVS

THV Seawind

Fabricom

HSS

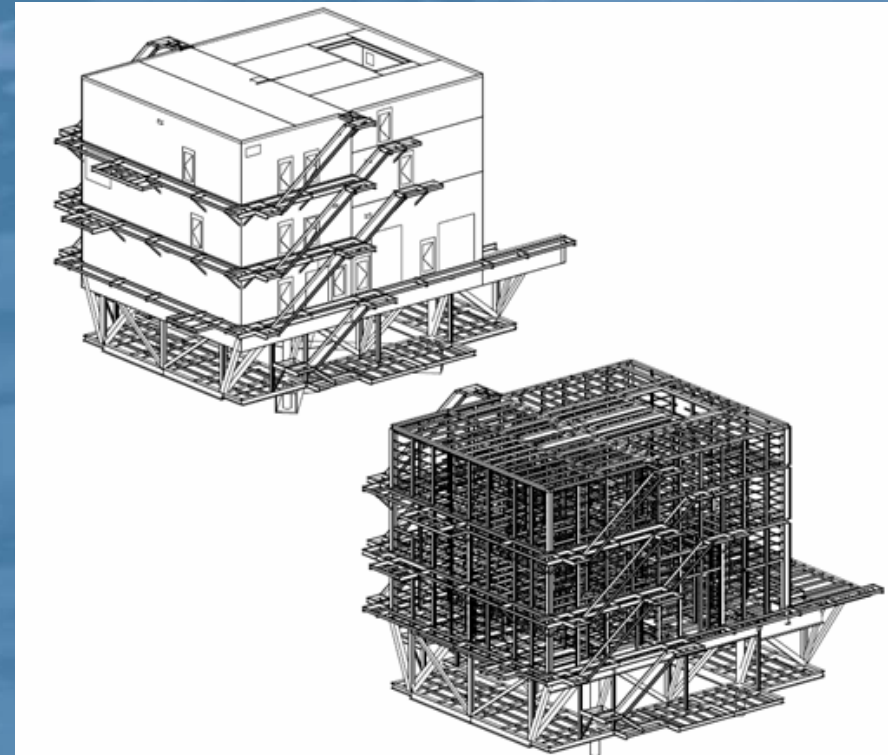
Pauwels

IEMANTS

OHVS:

20m x 20m x 20m

1100 ton








Dredging of Trench across 'de Scheur' (2010)

Borrow and Dump Area

"Controlezone 3b"

"Controlezone 3a"

LEGEND

-  Working area
-  Sailing Route TSHD - Dredging Cycle
-  Sailing Route TSHD - To Port of Zeebrugge
-  Boundary Navigation Channel
-  Axis Navigation Channel

Working Area at Crossing Location

To Zeebrugge



Installation Export Cable (2010)



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Skagerrak

Installation WTG (2010)

Pictures JB-109



THE END



THE END 2010?

