HSE and Fabrication

BIO Henk de Pater

Since 2007, I have been involved in offshore and onshore wind energy, starting as an electrical engineer on the world's largest offshore wind farm at the time—Princess Amalia Wind Farm.

Over the years, I have taken on different roles across contracting, development, and execution phases, including Package manager WTGs, Electrical Scope and Foundation Fabrication and Supply and as advisor regarding electrical infrastructures, offshore substations, port development, marshalling and assembly harbours and fixed bottom and floating foundations.

Experience spans projects such as Package Manager Electrical for Norther, Package Manager WTGs for Navitus Bay and Foundation Fabrication and Supply Manager for Veja Mate, Beatrice, and Seagreen.

Additionally, I have served as a supply chain advisor for fixed-bottom and floating projects including Hai Long, Formosa 4, Green Volt, Changfang & Xidao, and several undisclosed developments.

Currently, I am involved in the Berwick Bank project as foundation supply lead, foundation supply advise on IJmuiden Ver Alpha, and further I support clients across Western Europe, the Baltic, and Asia in advisory roles.

Since 2021, I have also served as a part-time arbitrator for the Dutch Arbitration Institute, London Court of International Arbitration, and Singapore International Arbitration Court, contributing as a (co)arbitrator, expert, and advisor in multiple cases.

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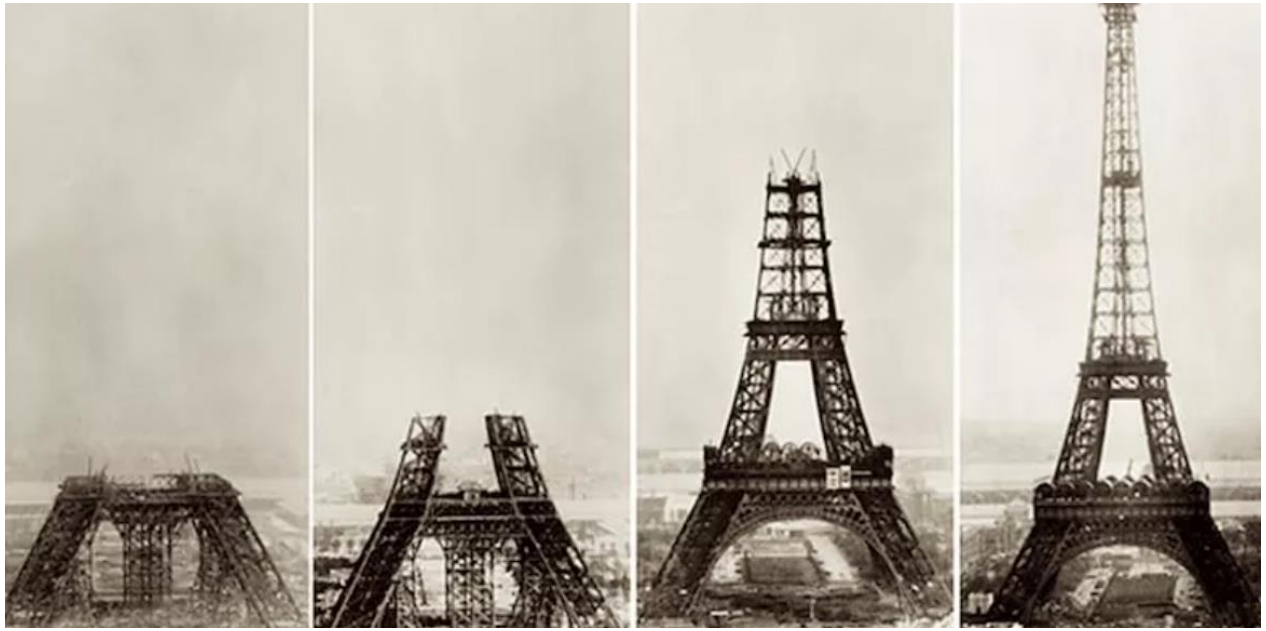
Picture: Seagreen Jackets, cluster 1/2

Construction projects in the past:

Eiffel Tower – finished 1889 - 1 fatality
Panama Canal – finished 1914 - 30,609 fatalities (approx 30% of the workforce)
Hoover Dam – finished 1931 - 96 fatalities
Golden Gate Bridge – finished 1937 - 11 fatalities
Aswan Dam – finished 1960 - 500+ fatalities
World Trade Centre – finished 1971 - 60 fatalities
Gotthard Base Tunnel – finished 2016 - 8 fatalities
Bur Khalifa – finished 2010 – 1 fatality

Golden Gate Bridge - first construction site in America that required construction workers to wear hardhats, however 2 out of every 5 construction workers were disabled while building New York's skyscrapers in the 1920's.



Offshore wind foundations requires extremely large fabrication yards and foundations are growing and growing.

The Seagreen foundation steel tonnage (200,000+ ton) is comparable with approx. 30 Eiffel towers (7300 ton), 4 Bhurj Khalifa's (world's tallest building, 55k ton steel) or 3 Queen Elizabeth Aircraft Class vessels (65k ton steel) or 1500 blue whales or 2.8 million humans. the jacket scope included 22km of legs and 55 km of bracing tubulars connected by 316,000m welding. At the peak 14,000 FTEs were involved, a total of 32,000 workers passed the project during all phases across 4 main fabrication sites and dozens of smaller sites across Europe and Asia.

Offshore Wind Foundation Projects

Main Risks during Fabrication:

- Working at height
- Access & entrances
- Heat stress
- Machinery
- Lifting
- Falling objects
- SIMOPS
- Unawareness of risks
- Lack of sufficient training
- Lack of communication
- Load out
- Logistics
- Confined space work
- Designs not aligned ALARP

Safety Starts at the design process but will never end

All people in a project (not only the site teams but also the Client) are being actively involved as influencer, motivator, teacher, adaptor, inspector, management by example and awareness stimulator. Often, we are underestimating our role in the safety aspects during design and execution however, everyone has a vital role and duty in keeping the people safe. The value of individuals and persons cannot be seen as a number; their value is unlimited.

So important to arrange and design the following aspects sufficiently:

- ALARP design (access, working at height, confined space, etc)
- Level of Safety Engineering
- HSE requirements and HSE management system
- Number and quality of toolbox meetings
- Last Minute Risk assessments
- HSE management budget
- HSE training budget and supervision budget
- Control of manpower, access to site, working durations
- Manage the HSE awareness
- Management SIMOPS
- Setup safe areas
- System to detect and stop violation of safety
- Safety-drills
- Signage & information boards
- adaption of safety by labour brokers, subcontractors and any company involved into the projects
- prevent a Hurry, Hurry, Hurry approach

Projects that has the right design approach and safety engineering of stringent but realistic HSE requirements, sufficient safety budget, sufficient signage, stand downs and additional training after incidents can make the difference.

QUESTIONS?

- Project Management
- Consultancy
- Engineering

Only a call away....
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