



HCE's SUPERSTRUCTURE DIVISION KEEPS GROWING

After closing out most of the work on HANSATOR, a new hotel of ca. 28,000 m² GFA near the central station in Münster, North Rhine-Westphalia, in autumn 2020, our team CIVIL is already involved with two further large-scale projects.

ZECH BAU SE issued an order for both Olympus Campus and PERIGON nearly simultaneously. The latter is a residential and commercial building of 34,000m² gross floor area on 11 / 17 storeys, situated in the new development „Pergo-

lenviertel“ in Hamburg-Winterhude. It is being implemented on a 6,500 m² property by DIE WOHN-KOMPANIEN Nord GmbH.

HCE is involved in design for approval and the executive design.

For Olympus Campus in Hamburg, which will be the new European headquarters for Japanese company Olympus, HCE PDD is involved in the construction management and the management of the approval process.



GRID DEVELOPMENT ACCORDING TO NEP - HCE INVOLVED IN PROJECTS

The national grid development plan (NEP) for 2035, published on January 29, analyses the grid development requirements for the energy system in Germany. It maps different scenarios which are all based on the goal of almost climate-neutral electricity generation in Germany in 2050.

Compared to the NEP 2030 (published in 2019) both cost volume and start grid has increased significantly. In the NEP 2035 the extent of the start grid amounts to a total of around 6,220km with an

estimated investment volume of around 38.7 bn. Euro. The overall estimated investment costs are 72,6 – 76.4 bn. Euros.

HCE ING provides preliminary design, design for approval and executive design for grid development projects; most recently for 33 pylons of the 380kV high voltage line Wahle-Mecklar.

HCE PDD is currently active in this sector both for project and construction management.



Verified by HCE – WHAT ARE CAT I, CAT II AND CAT III CHECKS?

For 20 years HCE has undertaken design checks and approvals of tower and foundation constructions of wind turbine generators.

Checks by the categories CAT I, II or III are required for international projects.

The British Standard (BS 5975:2008 – Table 1) and other international standards provide information about what these categories mean and which category is decisive for the construction of wind power plants.

According to BS 5975 a CAT I check is carried out by an engineer of the design team for simple structural constructions.

More complex designs, in particular where interactions between load assumptions and subsoil information need to be assessed, require a CAT II check, which needs to be carried out by an engineer outside the design team.

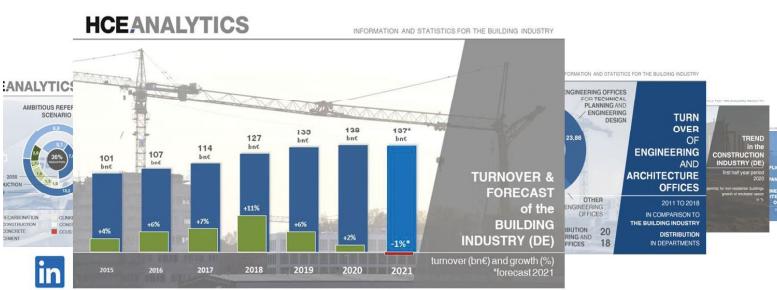
Static calculations and executive designs of foundation and tower constructions of wind turbines should always be subjected to a CAT III check.

This check needs to be carried out by an engineer from another organisation.

NEW FORMAT: HCE ANALYTICS

In 2020 HCE Design Group started to increase their activity on the social media platform LinkedIn.

We now have started to expand our presence by an additional format: HCE ANALYTICS will inform you regularly about facts, figures, news and interesting product information about the construction industry. The main focus is on superstructures and civil engineering, as well as the energy sector with an emphasis on grid expansion and renewable energy.



2021 NEWSLETTER 2



GROUNDBREAKING CEREMONY FOR PERIGON (BF4) IN HAMBURG

The groundbreaking ceremony for the new PERIGON building, Pergolenviertel, construction site 4, has taken place in Hamburg-Winterhude.

On an area of around 6,500 m², a building with 11 and 18 floors, two basement levels and a height of up to 57 m is under construction. On a total area of around 34,000 m², 200 subsidized student apartments, 20 apartments as part of "Hamburger Jugendprojekt", 81 privately financed residential units and further 78 rental apartments

will be constructed. In total, there are 379 residential units.

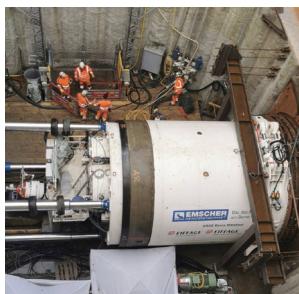
The development also provides space for facilities such as a daycare center, retail stores as well as offices and commercial units. Car sharing parking spots, car parking areas and around 500 bicycle parking spaces complete the project.

HCE was contracted in mid-2020 by the general contractor ZECH Bau SE with the structural design (LPH 4 and 5).



REWE LOGISTIC CENTRE NORD

In the meantime, construction work on the new REWE Logistic Centre Nord with an investment of around 330 million euros is well advanced. On an area of about 85,000 m², a logistics complex with administration, a system parking garage, a gateway, a car and truck gas station as well as a car wash are being built. On behalf of Max Bögl, HCE provides engineering services ranging from design, approval and implementation planning to construction supervision.



WASTEWATER PROJECT – HEADWORK STARTED IN SHAFT S011

The Emschergenossenschaft is extensively expanding the sewer system in Essen-Berne. With a length of approximately 20 km, the construction project is being built along the Berne River and will carry wastewater in a closed sewer system in the future. A total of 40 shaft structures are planned along the sewer route for the excavation operation. The cross-section of the canal was dimensioned to 3.80 m.

HCE performed the design for the start

and target pits S011 and S012 for headworks, including the verification of the anchor and pressure forces from forcing.

The design of the deep excavation pits was carried out according to EAB (recommendations of the working group excavation pits).

The target pit could be designed as an unreinforced overcut bored pile wall, although the high excavation pressures and ground conditions in the launch pit required a partially reinforced structure.



LUXURY APARTMENTS ON THE ELBE

In Hamburg-Blankenese, in an outstanding location directly on the Elbe River shore, a residential complex with several luxury apartments will soon be built. After approval planning has been completed, work has started on the excavation pit and the support structure of the Elbe slope.

GYMNASIUM RIETBERG

First pile driving and official start of the work of Gymnasium Rietberg new building. On behalf of Arkil Spezialtiefbau, HCE is responsible for the detailed design of the deep foundation on 180 pre-cast concrete driven piles.



HCE DESIGN GROUP



HCE EXPANDS ACTIVITIES IN THE FIELD OF GRID EXPANSION

HCE ING has been entrusted by Mitteldeutsche Netzesellschaft Strom mbH with the planning of the Bartelsdorf II substation.

The project is designed for the further expansion of the onshore wind farm operated by RWE.

HCE will support the project from approval planning to execution, adding another discipline to the ENERGY/GRID division.

For years, our ENERGY team has focused on advancing the energy transition, and not just in

Germany. In addition to the numerous wind energy projects, the focus is currently also on grid expansion.

With the Wahle-Mecklar project, Los A3 and A4, we were recently able to get an important section of the 380 kV line (North-South Link) underway.

The Bartelsdorf II substation will supply the first electricity to the grid in early 2023.



TYPE CERTIFICATION OF NEW WTG GENERATION AVAILABLE

Manufacturers and project developers have taken the advantage of the recession in the German wind energy market to get the new generation of turbines technically up and running and to place them in current project developments.

As a result, our engineering team had to design extensive development projects over the past two years.

For the turbine manufacturer Vestas our team has initiated numerous type certifications in coop-

eration with TÜV Süd. Among others, the foundation designs of the turbine types V136 with hub heights of 112, 129 and 149 m, the V150 5.6MW with hub heights of 125, 148 and 166 m, the V150 4.2MW with 145 m as well as the V136/V126 3.45MW with 166 m hub height bear the signature of our engineering team.

In addition to optimising of the foundation designs, the technical aspects of extending the lifetime to 30 years were intensively clarified.



INVESTORS TRUST HCE'S AUDITING EXPERTISE

More and more investors and project developers rely on our now twenty years of experience in the wind energy sector for the technical due diligence of their projects.

International projects for example of our clients KGAL, Akvo Energy, SSER, OX2, MEAG, PNE/WKN, UKA, Temporis, Allianz Capital Partners and Sevivon are regularly reviewed by our team of experts and submitted to a Category 3 Audit.

Such reviews of structure designs include full-

scale and independent comparative calculations based on the available executive drawings of the projects.

The calculations are usually performed on 3D models and the Finite Element Method.

Most recently, there has been increased evaluation of projects from the very active Polish market: FW Janikowo, FW Kuslin, FW Krzecin, FW Grajewo, EP44 and Gniew as well as FW Sulmierzyce.



HCE ON SITE

Our site management has comprehensively revised its monitoring approach and construction site documentation. Among other things, more space has been given to the topics of the environment and sustainable construction, and project status reporting has been significantly improved.

In parallel to Thaden Wind Farm, our team is currently working on the projects Auras, Ujście, Krzywosadow, Vanessa and Seelow-Gusow in Germany, Latvia and Poland.

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