[Smart charging pole foundation]

INTRODUCTION

[We are the projectgroup Whatts up. This semester we worked on a project for Elaadnl in collaboration with several businesses including but not limited to NEN Connect, Morsinkhof and VDL.]

- [The goal of this project was to design a **universal foundation** for EV charging poles. This foundation would serve as the first step toward a **standardized and modular system**, making future installations faster, cheaper, and more sustainable.]

JOURNEY & LEARNINGS

[We had a rough start due to overlapping extracurricular commitments, which limited our time on the project. Luckily, as the semester progressed, we were able to dedicate more time and focus, which helped accelerate our progress. The **research phase**—especially around **NEN norms** and **ground mechanics**—was particularly challenging. Due to time constraints, we had to scale back our in-depth exploration of some standards and calculations. However, once we reached the **ideation and concept development stage**, we were able to move quickly and efficiently toward prototype creation and testing.]

[We learned a lot about NEN norms, that they can be really helpful, but that they might not be made for your exact situation or product.

Additionally, we gained valuable insights from experts across various fields, including infrastructure and engineering. These experiences broadened our perspective and taught us the importance of practical flexibility in technical projects.]

OUTCOME & IMPACT

[We created **four different prototypes**, each designed to test different materials and structural ideas. These prototypes allowed us to evaluate performance, adaptability, and ease of installation—laying the groundwork for a more universal solution.]

[The benefits of a standardized or modifiable foundation may not be immediately visible, but they build up over time:

1. You don't need to **remove the existing foundation**, which saves labor and materials.
2. You don't need to **manufacture a new one**, reducing waste and environmental impact.
3. You don't need a **specialist** to disconnect and reconnect electrical systems.

This results in **lower costs, less waste, and reduced installation time**—a win for cities, companies, and the environment.]

[We're proud that we managed to develop and test **several working concepts**, despite early delays and the complexity of working with industry standards. We're excited to show our **prototypes**, the **ideas behind them**, and the **potential improvements** we've identified going forward.]

Concept 1.1
Groot

Afmetingen:
Bovenplaat: 300, 275 mm
Onderplaat: 400, 375 mm
Hoogte: 600mm

Materiaal:
Constructie staal (S235)

Onderdelen:
6 plaat delen

Geschatte gewicht:
30 kg

Concept 2.1
Groot

Afmetingen:
Boven/ onderplaat: 300, 275 mm
Hoogte: 600mm

Materiaal:
Beton met kunststof vezels

Onderdelen:
2x bovenplaat
4x pilaar

Geschatte gewicht:
32 kg

Concept 1.2
Klein

Afmetingen:
Bovenplaat: 240, 220 mm
Onderplaat: 340, 320 mm
Hoogte: 600mm

Materiaal:
Constructie staal (S235)

Onderdelen:
6 plaat delen

Geschatte gewicht:
21 kg

Concept 2.2
Klein

Afmetingen:
Boven/ onderplaat: 240, 220 mm
Hoogte: 600mm

Materiaal:
Beton met kunststof vezels

Onderdelen:
2x bovenplaat
4x pilaar

Geschatte gewicht:
26 kg