

Vortex Column

the proposal

In fulfillment of the request for the engagement of art within the Kármán-Auditorium der Rheinisch Westfälischen Technischen Hochschule Aachen (RWTH), Zentraler Hörsaalkomplex mit acht Hörsälen, Seminarräumen und Cafeteria.

Standort 2 is the site of our proposal.

the idea

A vortex is formed when forces are channeled and fortified; it is here understood as an analogy to the function and promise of an educational environment.

The artwork aspires to be a visual metaphor for the forces at work in the vortex which is the RWTH's educational community; a porous engagement of multiple disciplines with an emphasis on sustainability through circulation: reintroduction and reinterpretation.

The artwork is a symbol of an idea of forming the future; where the material itself has the ability to hold its own form.

Material is the foundation of form. Material is a metaphor for community.

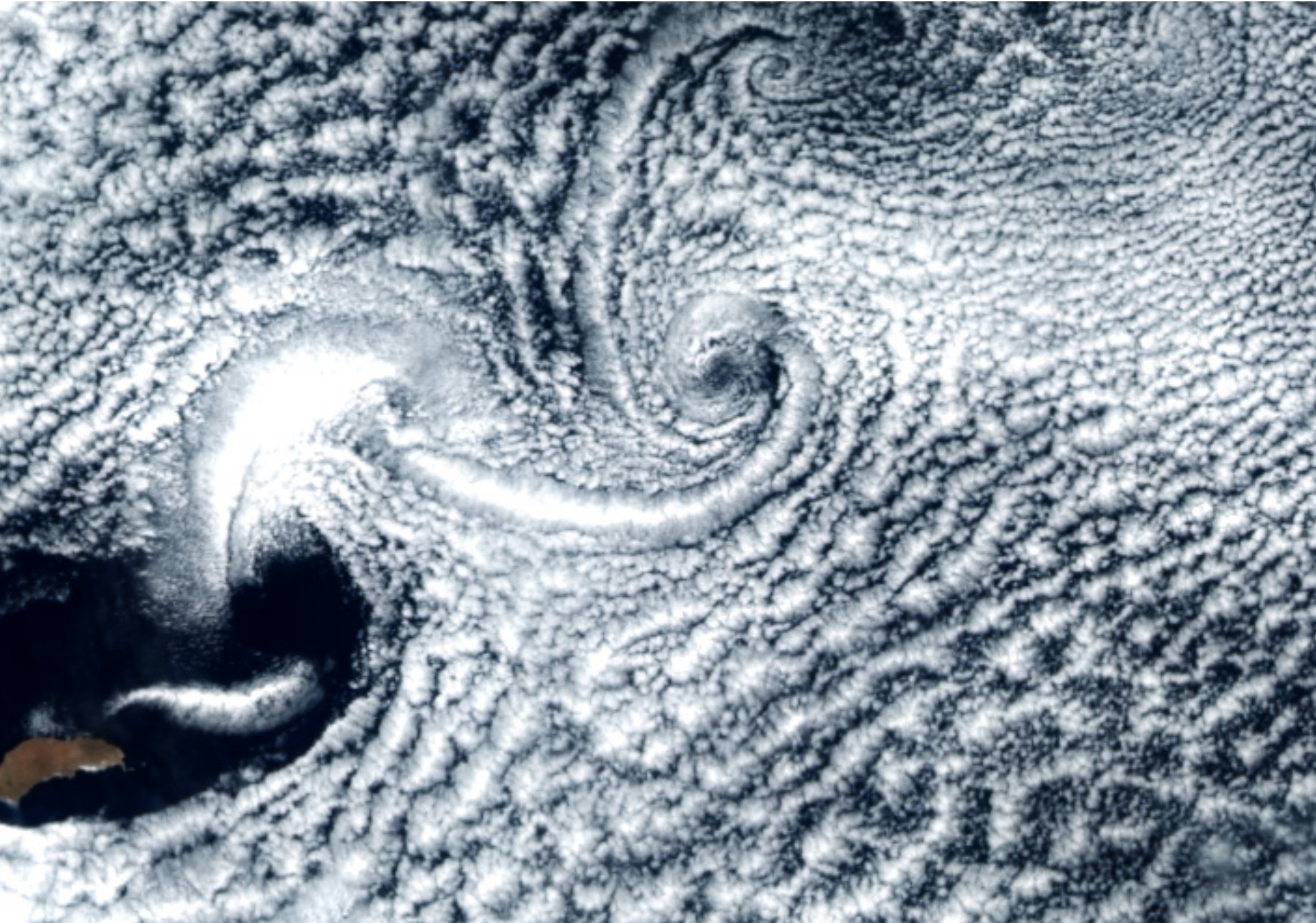
The artwork is considered a study of the flow of matter and its transformation under stress; a conceptual process seeking for combined properties, such as viscosity, elasticity, and fluid mechanics.

The artwork captures fluidity visually; it is guiding movement, (circulation), as an obstacle that is a like a boulder in a stream, a beautiful analogy for all of human consciousness and especially for education. Obstacles defy gravity, the essential nature of turbulence; turbulence and obstacles yield productive form.

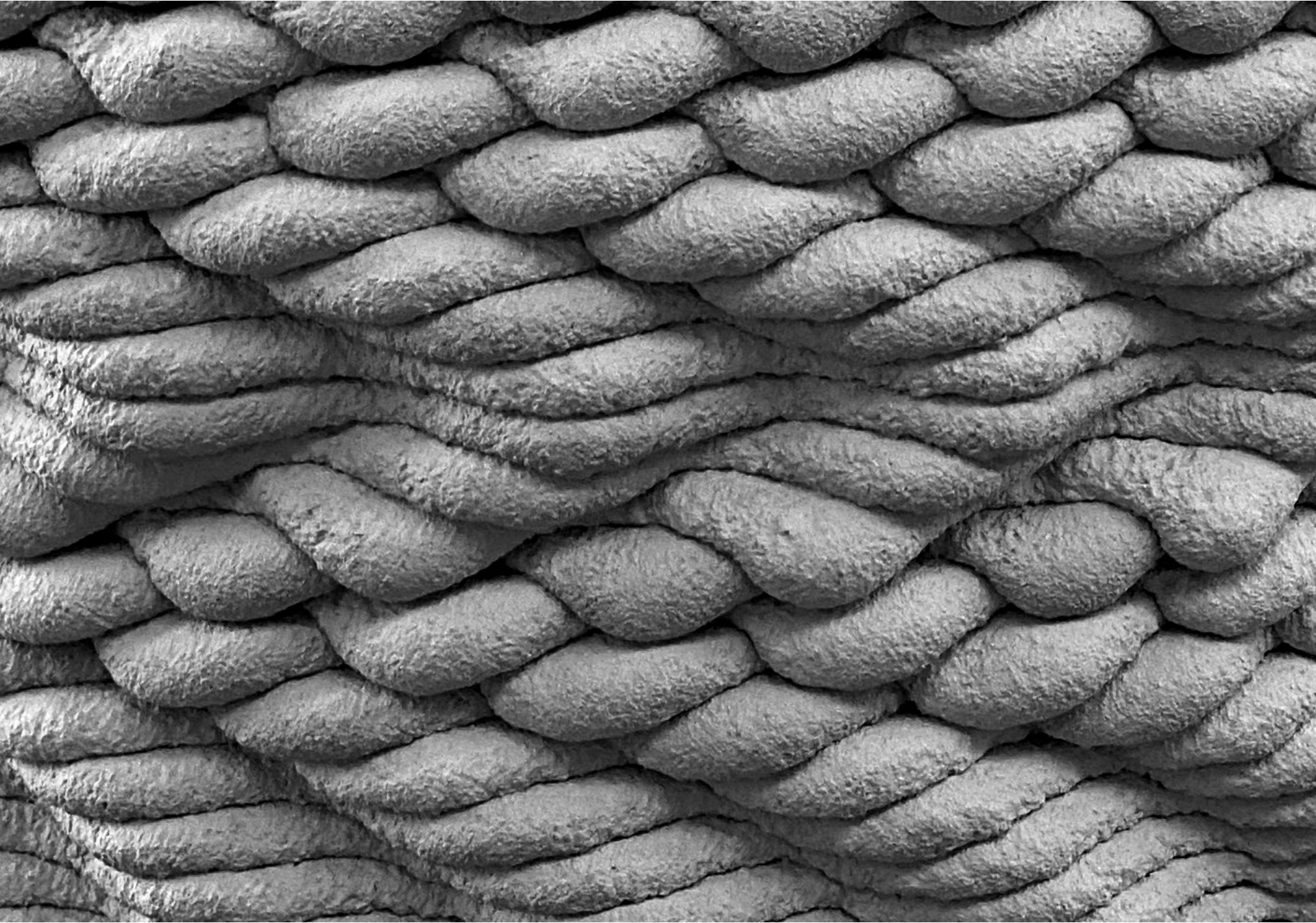
The artwork creates simulations of the physical obstacle that produces form within a building and its identity over time.

The artwork reveals the complexity of renovation and speaks to time.

The artwork is an analogy for the construction of future ideas.



Kármán Vortex street



Printpattern concrete 3D-printing



Vortex Column

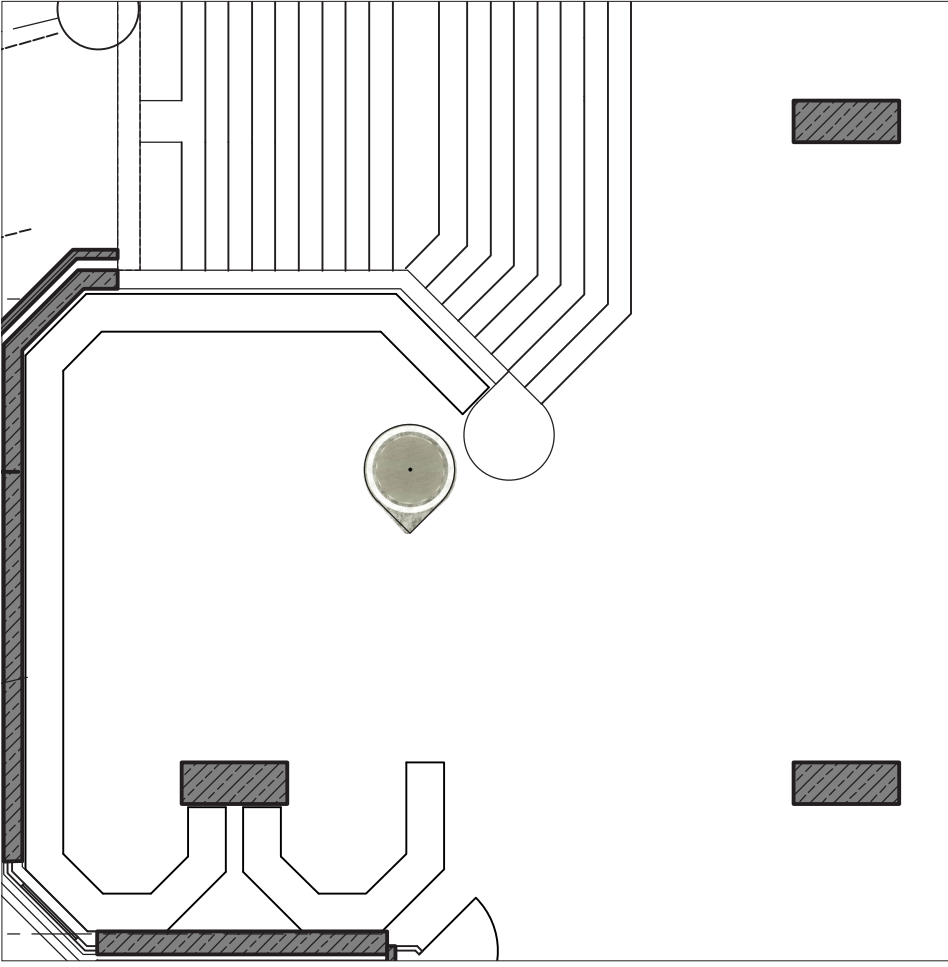


the artwork: Vortex Column

The "Vortex Column" is comprised of interconnected and desparate elements rising vertically from the foyer to the second level of the building's prominent stairways, arriving just short of the ceiling.

Building upon and with the architectural vocabulary introduced and protected in the planned renovation of the main foyer, the "Vortex Column" echoes existing structural and non-structural columns; the detached and slightly rotated foundation of the column mimics the gestural volume formed at the beginning of the main stairway leading to the Hirsäle; the 24 led tubes mounted in a two tiered circular grid, radiating from the upper rim of the column, multiply the light function of the original grid system of hanging globe lights.

standort 2



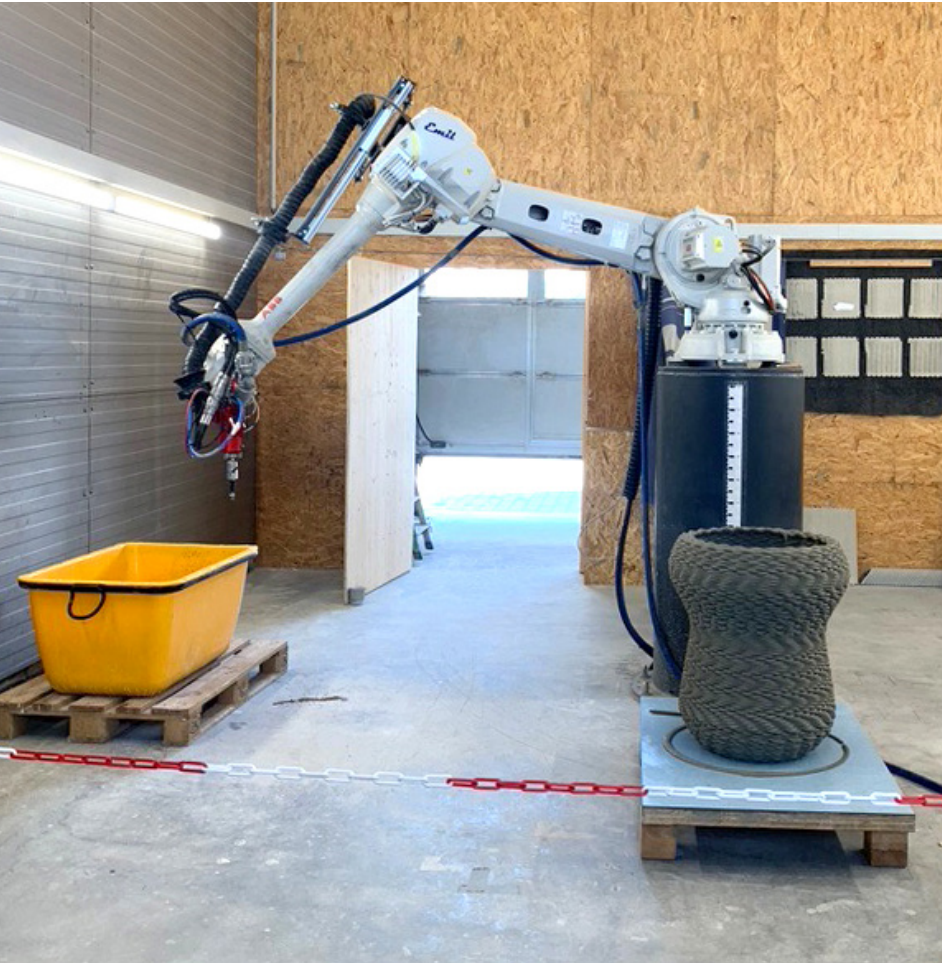
scale 1:100

details

The artwork consists of 3 elements: pedestal, column and lights. A total height of 10 meters and a maximum diameter at the pedestal of 1 meter are achieved. If the base and the lights are manufactured using conventional processes, the column is created using an innovative 3D concrete printing process. To reduce the carbon footprint, CO2-optimized concrete is used. Since the column consists of pre-produced individual parts, it can be set up quickly in just a few days without large equipment.

lights

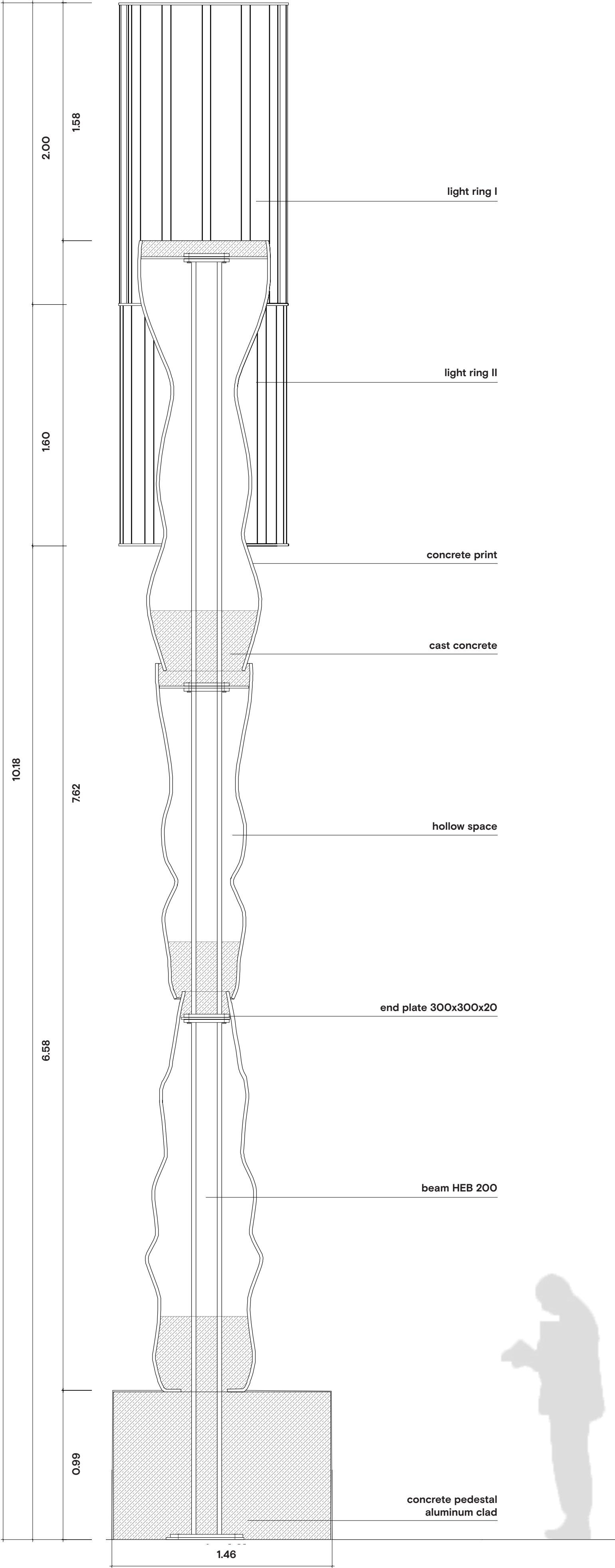
The lights form a round structure and crown the column. 12 LED tubes form a ring in each segment, which is connected to the column via steel rings and brackets. The cables for the electricity are routed through the hollow column.



Print robot



Sample print pattern



column

The column consists of individual concrete elements, which are created using a 3D concrete printing process. These are hollow concrete shells which are connected to the base using a steel beam. Round steel plates are fitted at the abutting edges and concreted over for stiffening. This creates a statically testable and stable component. Since the column consists of pre-produced individual parts, it can be set up quickly in just a few days without large equipment.

pedestal

The pedestal of the work of art consists of a precast concrete part and forms the anchor in the ground to meet all static requirements. The surface is covered with aluminum.

