

■ Overview

AIZAWA Concrete Corporation
Taichi Azuma

Producing a non-structural curtain wall using a 3D concrete printer.

Created by simulating data obtained by sensing the wind environment.

A large piece of cloth was hung on the south side of the RDM Center, and Houdini was used to create a model based on actual wind environment data.

We ran a simulation and 3D printed the calculated shape.

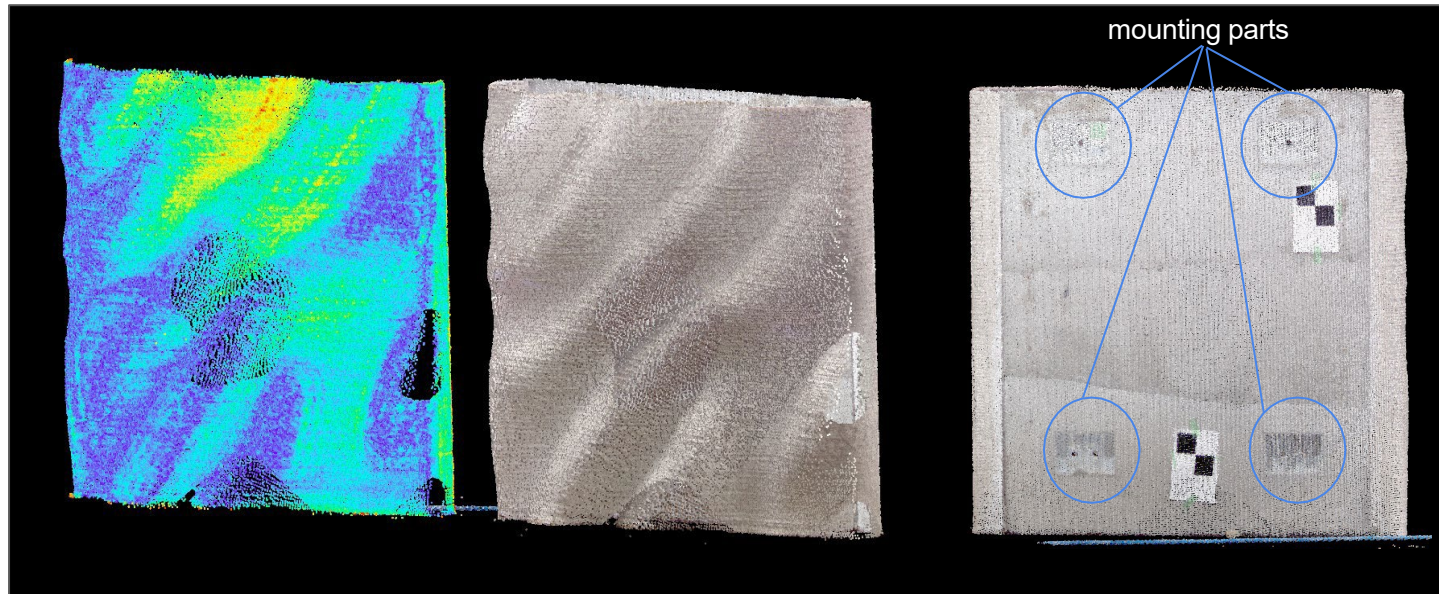


■ Manufacturing and inspection

By using a hybrid manufacturing method of 3D printing and formwork manufacturing, we ensured precise dimensional accuracy and vertical surfaces required during construction.

In order to manage the finished 3D shape, we measured the shape using a laser scanner and inspected the product using a point cloud database.

We confirmed that the tolerance between the top and bottom products was within $\pm 5.0\text{mm}$, and that the mounting hardware on the back was within $\pm 1\text{mm}$.



■ Overview

One half is made of printed concrete and the other half is seamlessly connected with fabric.
The octagonal cross section is twisted and turned around to create an ∞ shape.

In consideration of user comfort and safety, we are painting coating materials.

Utilizing integrated CAD/CAM and digital fabrication tools, the design, structure, manufacturing, and construction were integrated, and the project progressed smoothly within a limited period of about 1.5 months.

A characteristic feature is that there are parts that are not installed on the ground like arches,
The arch part has steel pipes inside, and the structure is supported by two rows of steel pipe arches, and the exterior is made of c3dp.

