

# MUD FRONTIERS

## ZOQUETES FRONTERIZOS

**RONALD RAE**  
University of California Berkeley/  
Emerging Objects

**VIRGINIA SAN FRATELLO**  
San Jose State University/  
Emerging Objects

MUD Frontiers addresses Mobility, Ubiquity and Democracy within the field of robotic additive manufacturing.

Mobility: Robotic 3D Printing

The MUD Frontier project uses a mobile and lightweight, robotic 3D printing set-up that can easily be transported to the field or print site. The printer is combined with a continuous flow hopper that can print large wall sections and enclosures, structures considerably larger than the printer itself.

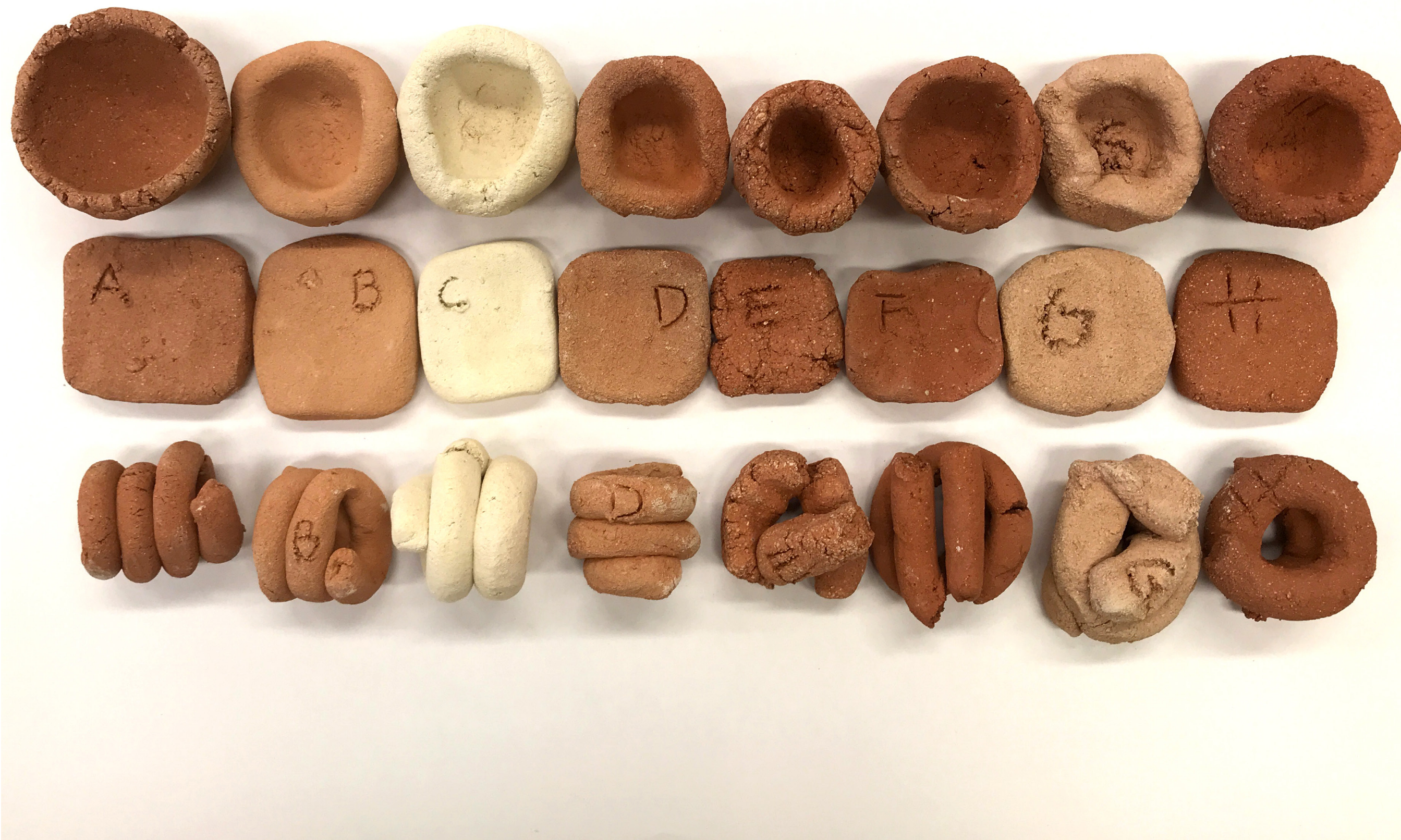
Ubiquity: Mud and Clay

The printer is used to 3D print local muds and clays from the print site and surrounding region. The mud and clay in many instances are free, as they can be dug directly from the ground or surrounding region where the walls and enclosures are being printed.

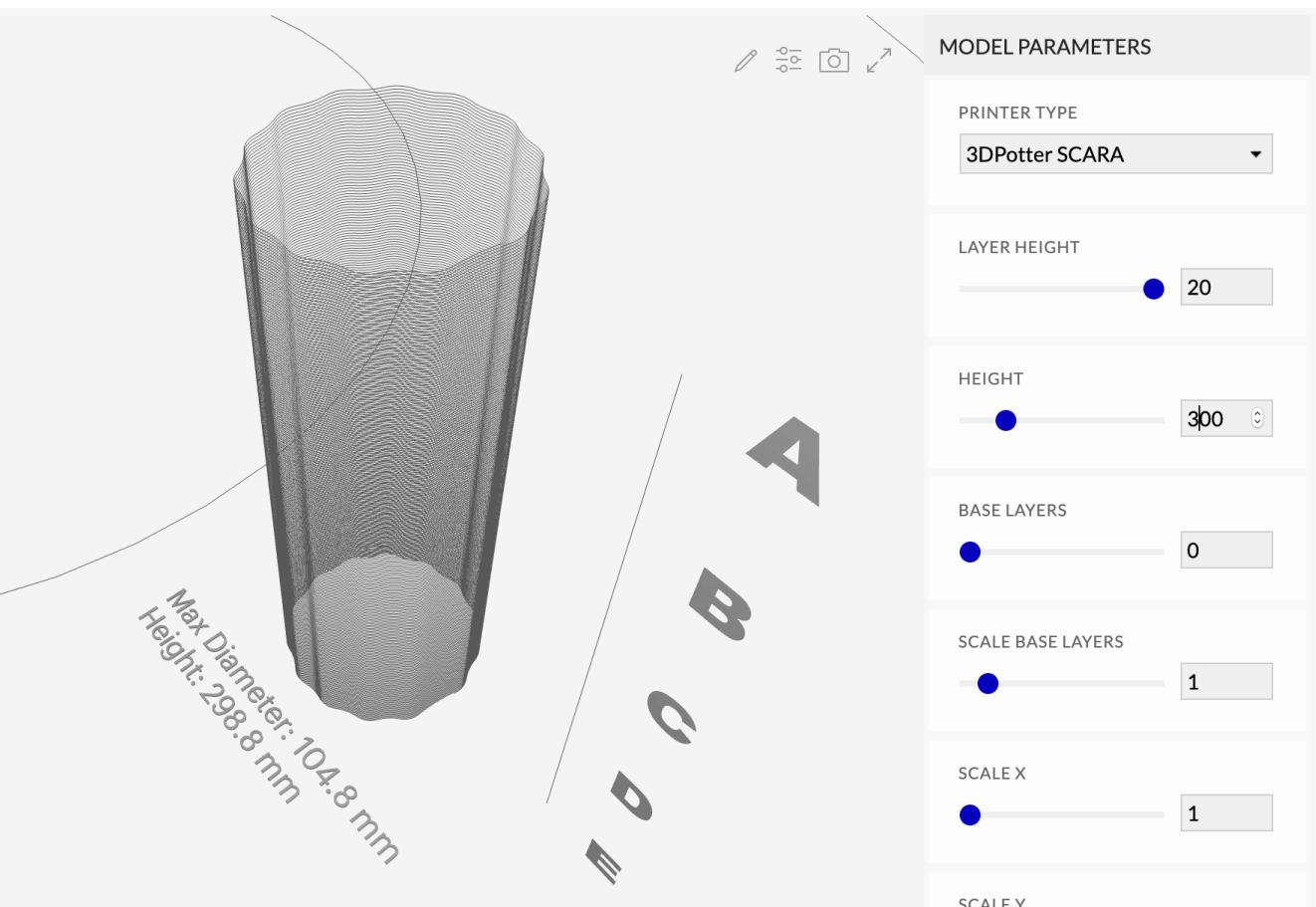
Democracy: Software

Custom software, called Potterware, is used to design the walls and enclosures printed by the robotic 3D printer. The software is an intuitive design app, that runs in the cloud, for 3D printing that features easy to use sliders and automatically generates printable gcode files.

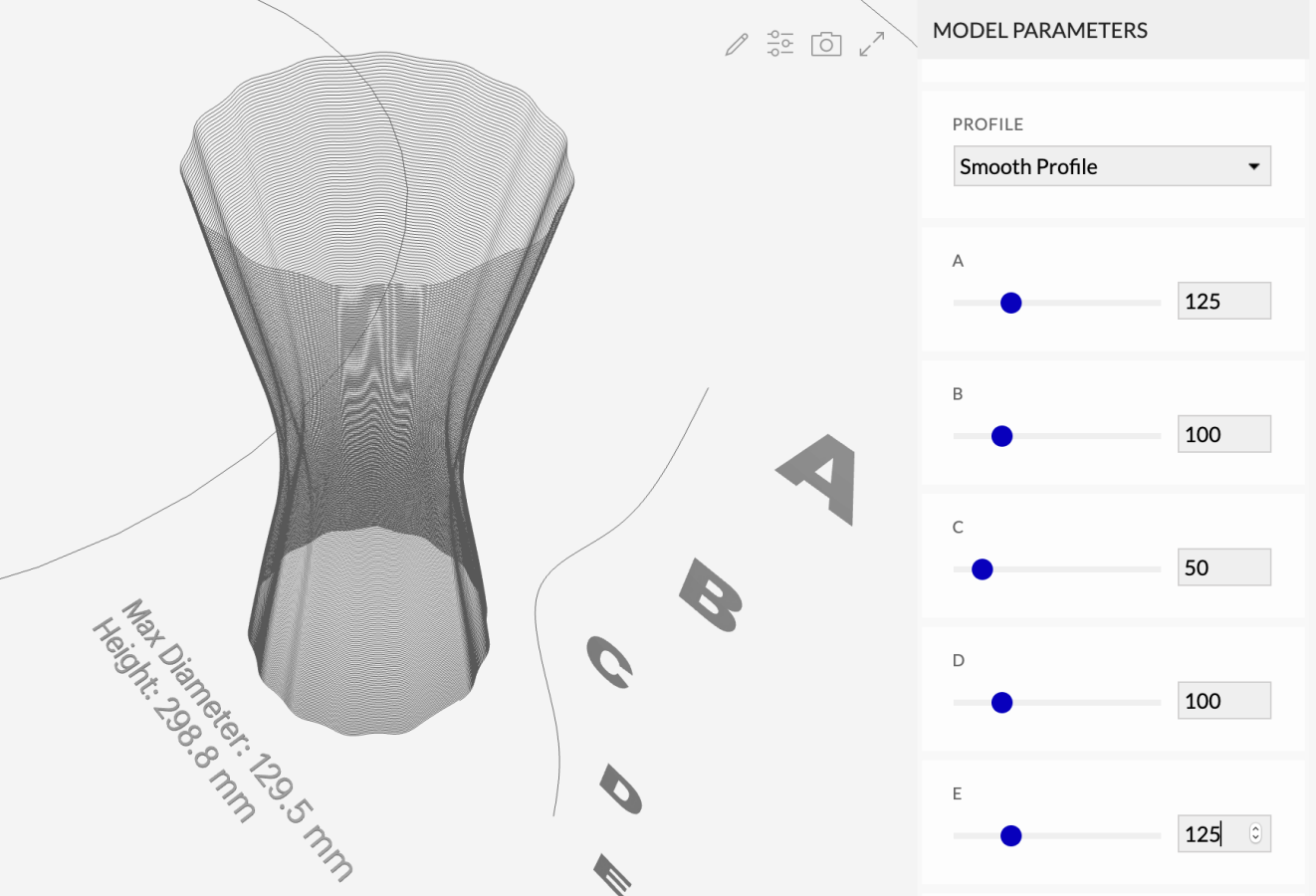
1. Local clay samples collected from El Paso, Texas and Juarez, Mexico. (Dina Edens-Perlasca)
2. 3D Printed Brownware (Olalekan Jeyifous)
3. 3D Printed Brownware (Olalekan Jeyifous)
4. Potterware: Layer height
5. Potterware: Diameter dimensioning
6. Potterware: Wave type
7. Potterware: Nonplanar mode
8. The lightweight robotic set up in use at the print site.
9. MUD Frontiers as part of the "New Cities, Future Ruins at the Border" exhibit at the Rubin Center for the Visual Arts at the University of Texas at El Paso. (Emerging Objects)



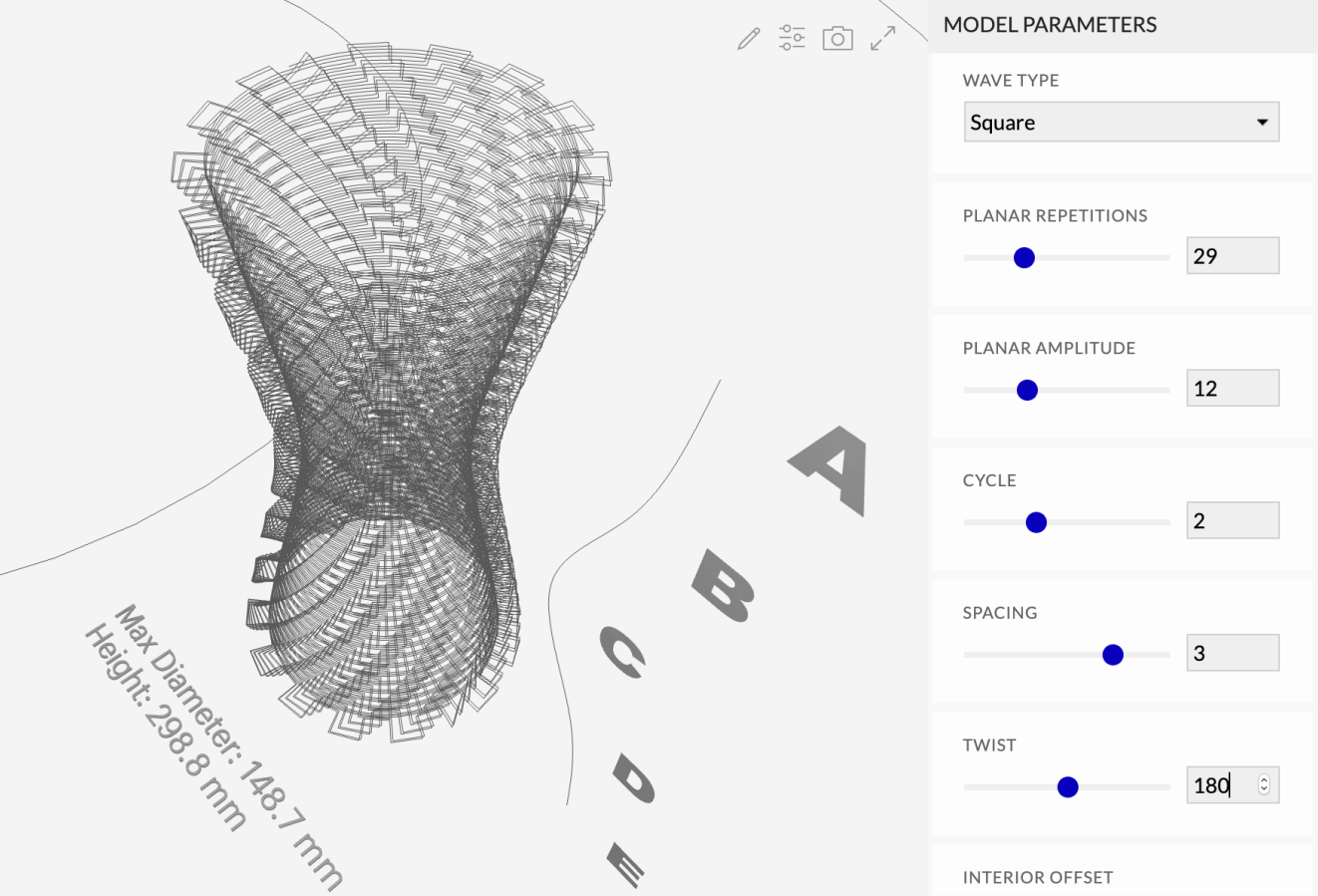
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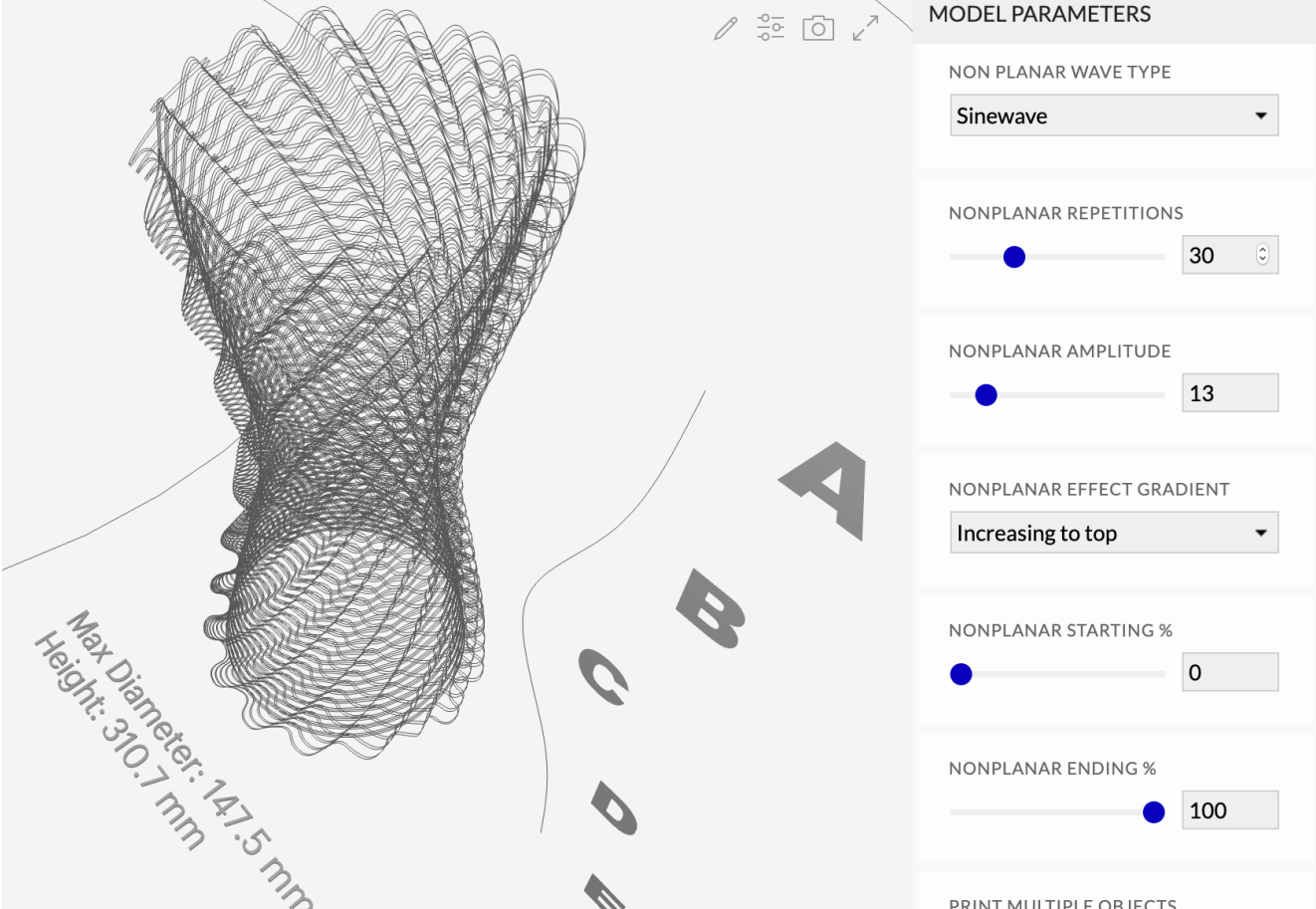
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Mobility: Robotic 3D Printing

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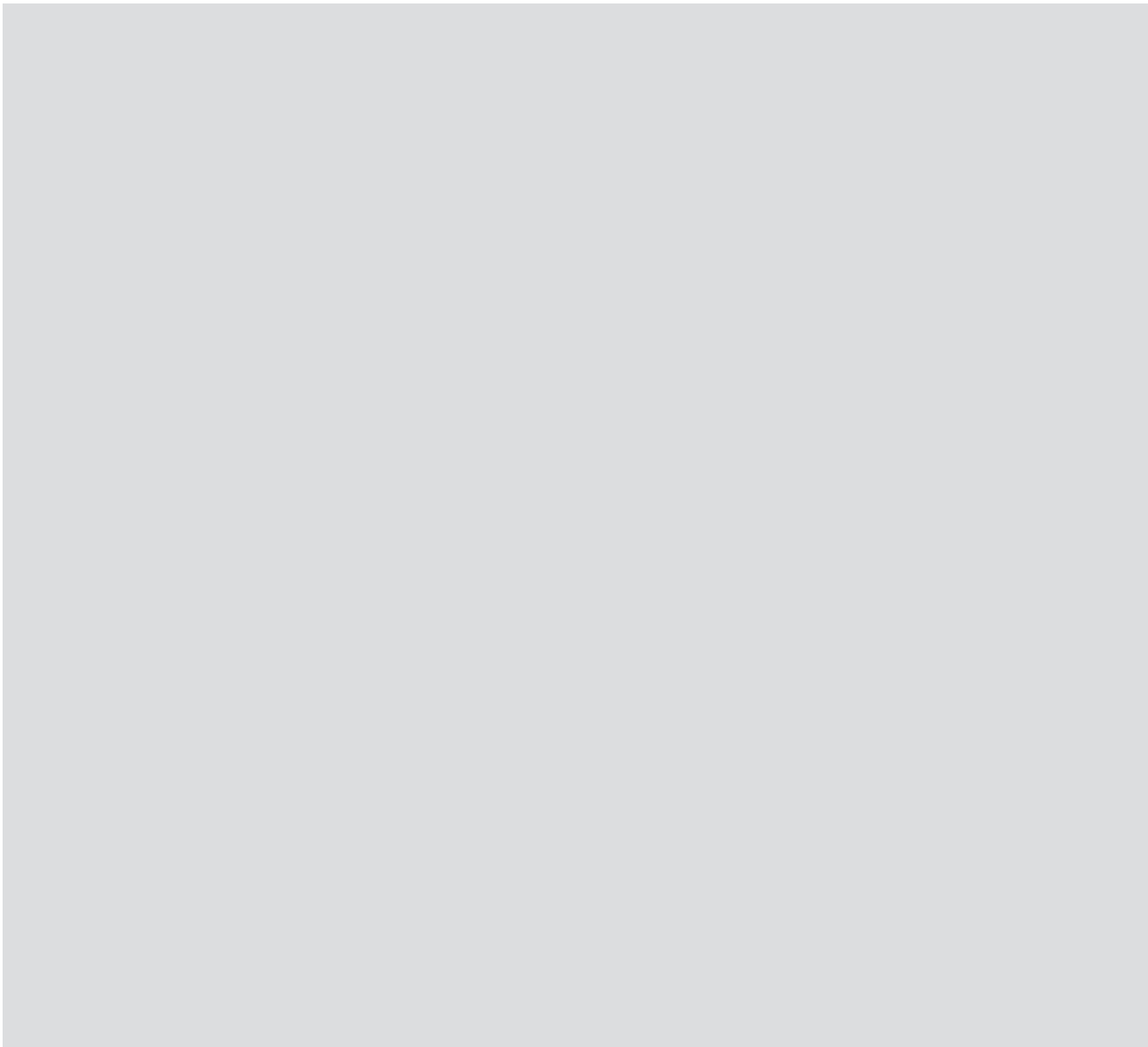
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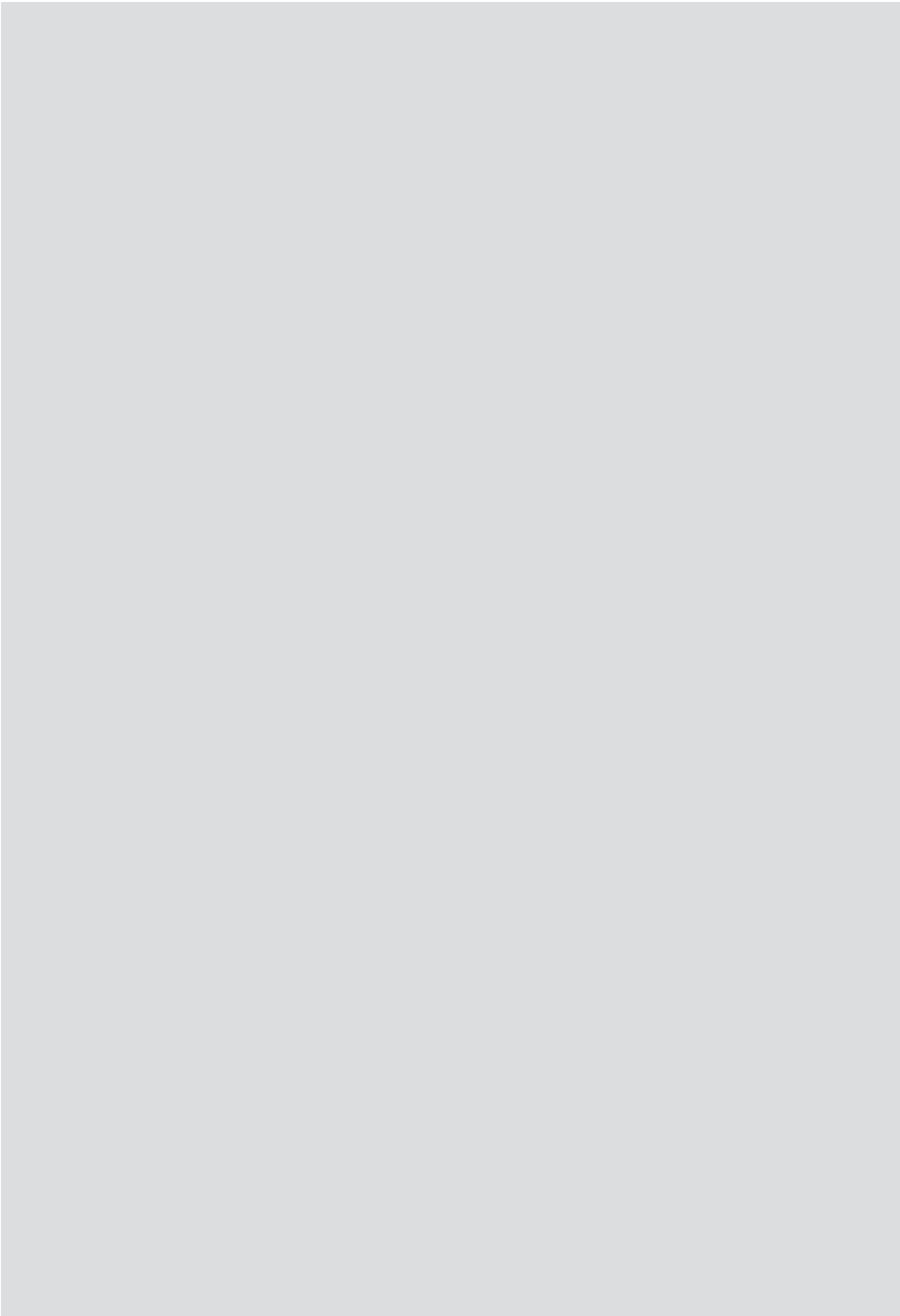
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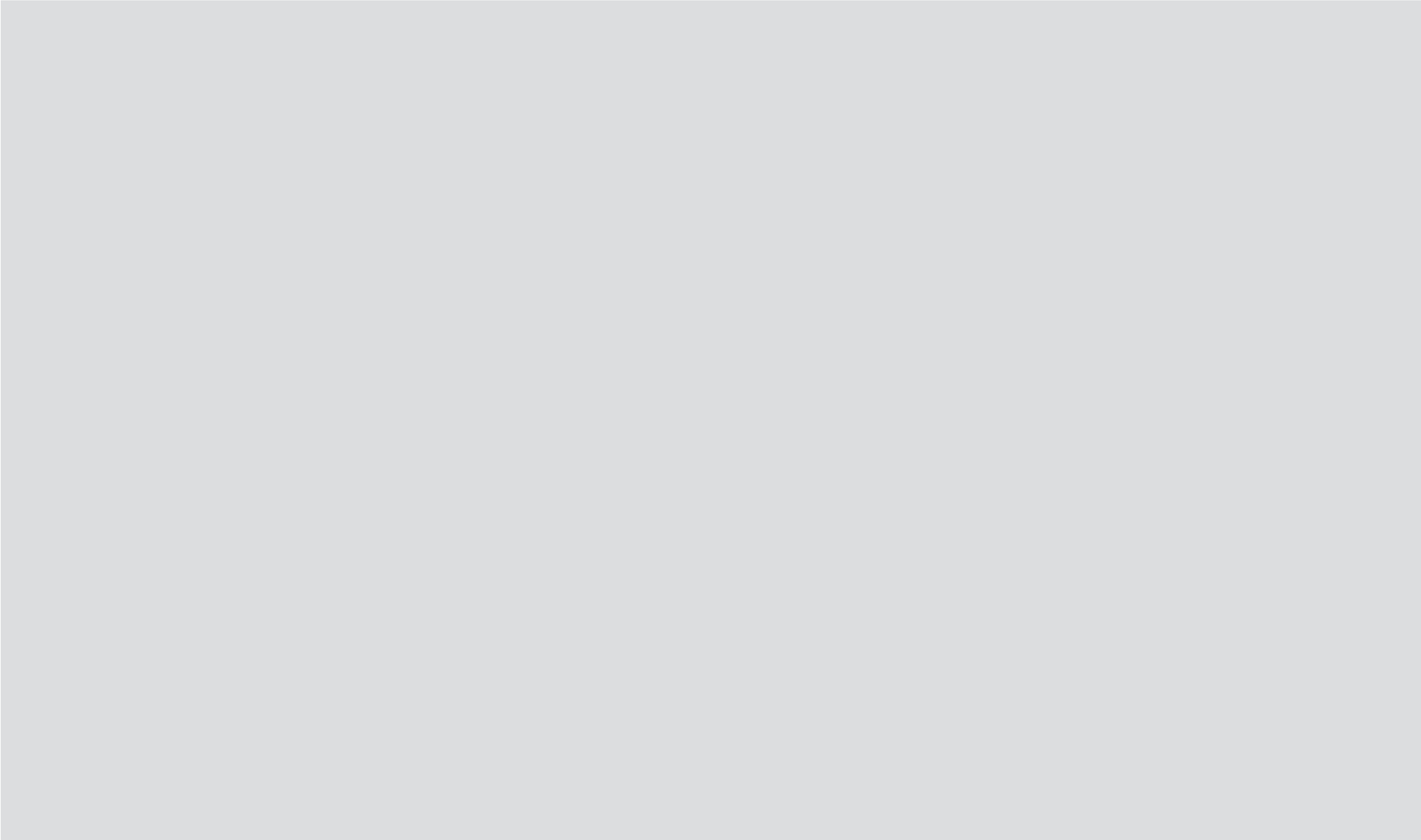
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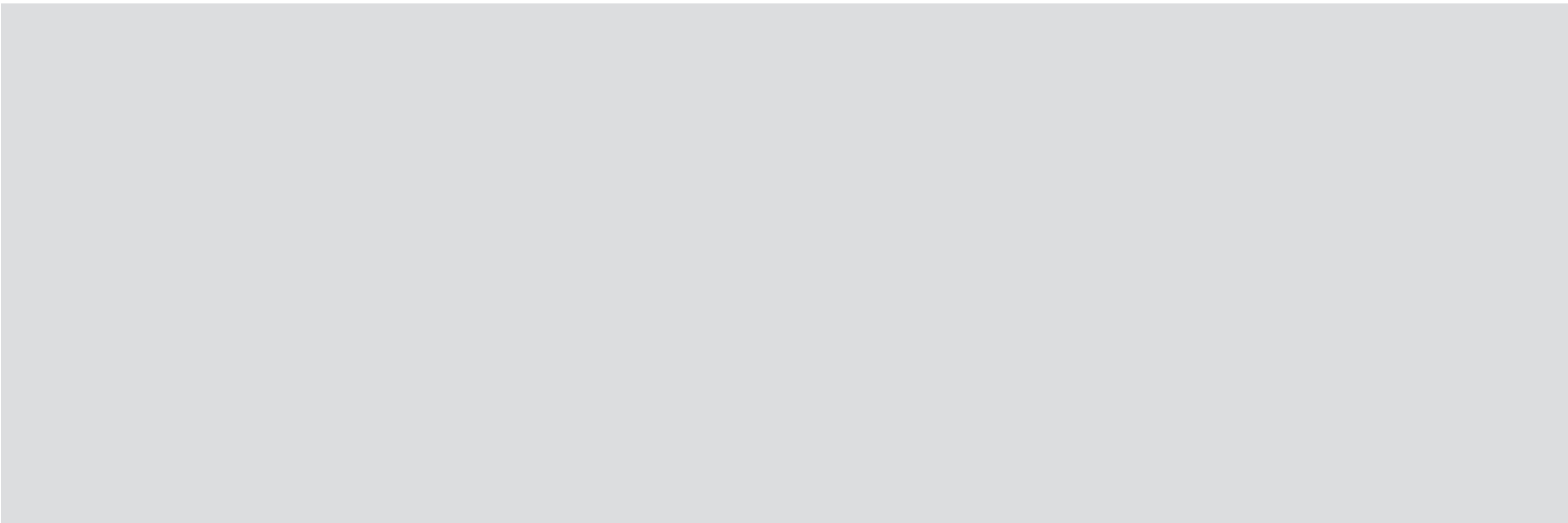
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