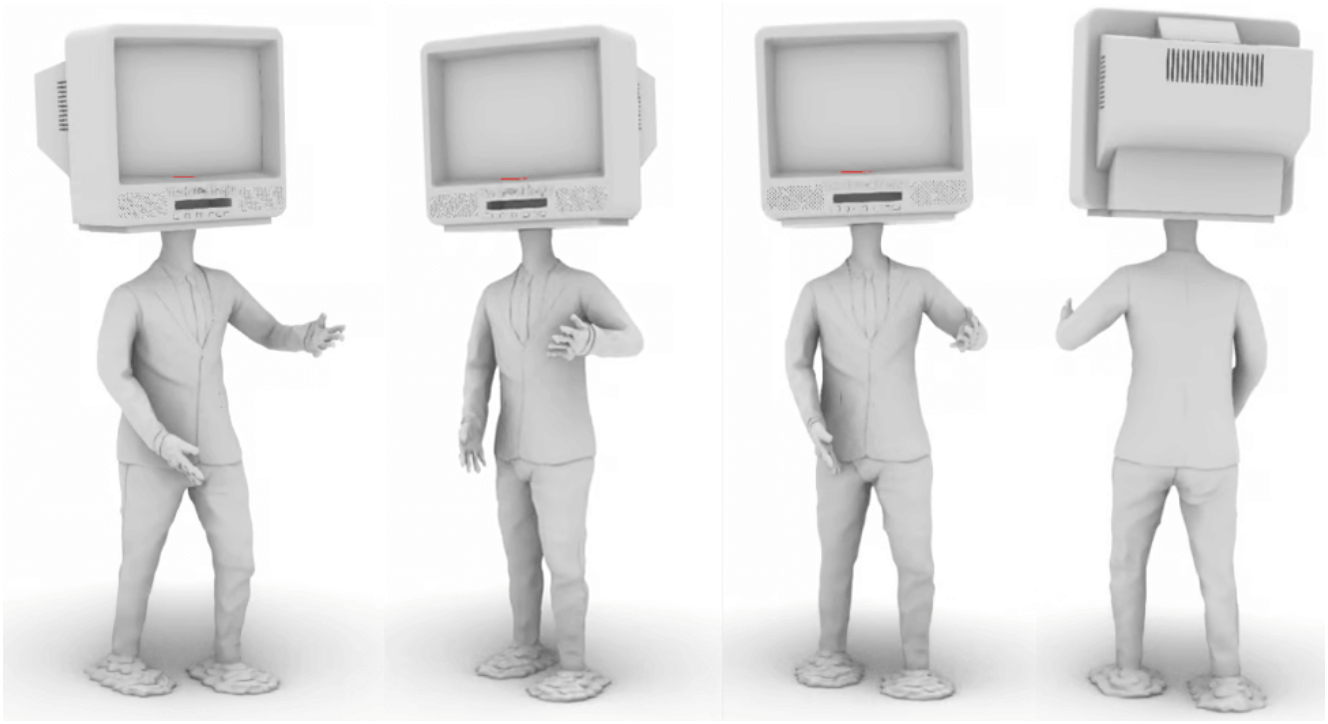
TV Head Guy: From Digital Sketch to Life-Sized Installation

Towering over six feet tall, *TV Head Guy* is more than just a sculpture—it's a manifestation of an artistic journey that began with a digital poster and ended in a fully fabricated physical form. Developed as an independent study at SUNY New Paltz, the piece became Brooke Pennington's unofficial thesis and a large-scale testament to design, fabrication, and creative problem-solving.



FROM SKETCH TO SCREEN

The idea for *TV Head Guy* came from a stylized digital poster of a recurring character from Pennington's personal brand, *The Good People*. Wanting to create a version that could be built in real life, she reimagined the figure with a different type of television head that would be easier to fabricate. This sketch served as the foundation for the entire project.

Pennington began by modeling the TV head in Rhino, using reference images from two different angles. With simple curves, extrusions, and

Boolean operations, she crafted the geometric form of the TV, complete with buttons and a logo.



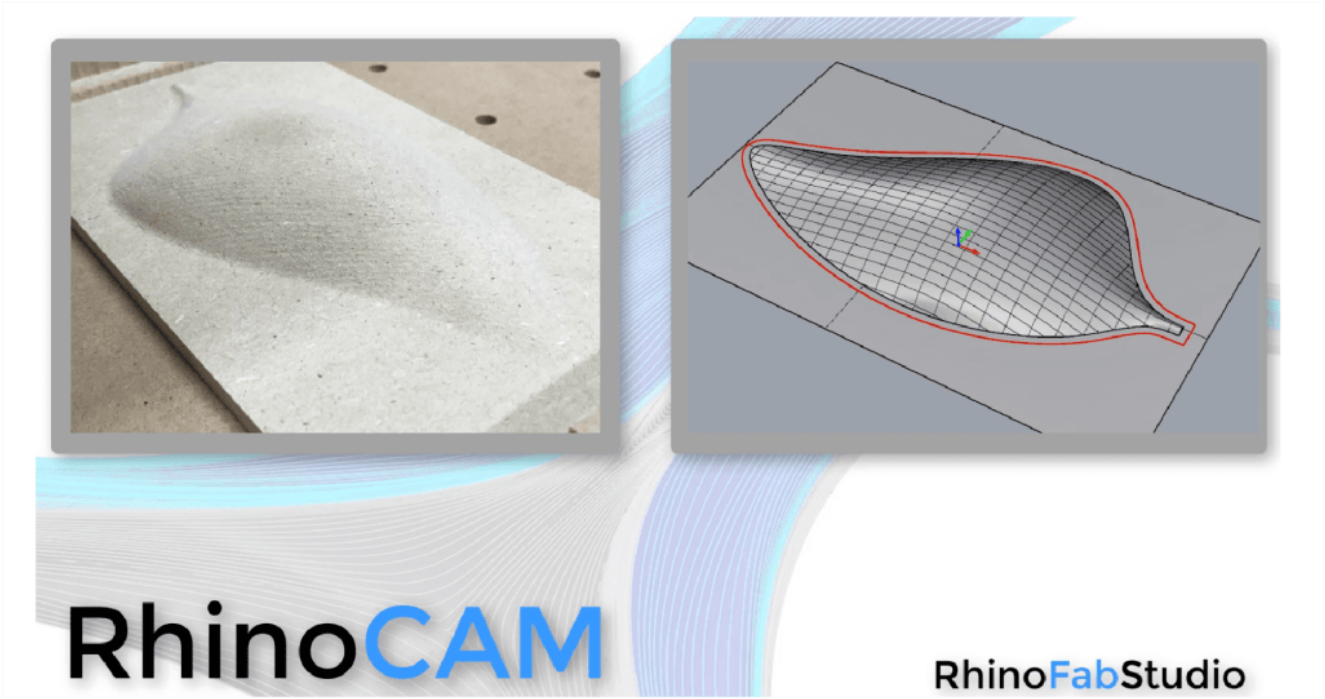
SCULPTING THE BODY

The body of the character was sculpted in ZBrush using a base mesh and a combination of body scans in zombie-like poses and various photo references. This part of the project took the most time, requiring detailed attention to anatomy, posture, and character.

Once the digital sculpt was finalized, it was imported into Rhino alongside the TV head to refine proportions and prepare for fabrication.The sculpt was then processed in Magics to ensure it was a closed, watertight mesh suitable for CNC milling and 3D printing.

MILLING IN FOAM

Using RhinoCAM, Pennington sliced the TV head into two-inch-thick sections to match the dimensions of the insulation foam boards used for milling. She arranged the slices for optimal use of materials and, with the help of her advisor, Ben Kellogg, prepared CNC files for the school's ShopBot CNC router.



See Also

RHINOCAM 2 1/2 & 3 AXIS

The body posed greater challenges due to its organic form and undercuts that exceeded the CNC’s reach. To solve this, Pennington used Rhino’s draft angle analysis tool to strategically determine slice points that would minimize loss of detail. Some areas still needed to be manually sanded post-milling.

In total, 11 CNC cutting sessions were required to complete the project.



ASSEMBLY & FINISHING

After milling, each foam piece was assembled using spray glue, wood filler, and careful sanding. The TV head was sealed with multiple layers of spray filler and mod podge-paint mixture, then painted in gray acrylic. The buttons, modeled in Rhino, were 3D printed and press-fitted into place.

The screen featured an infinity mirror effect, constructed using laser-cut mirrored and two-way acrylic sheets, LED lights, and real TV wires for added detail. Rhino was used to extract the screen profile for laser cutting, and Illustrator was used to finalize the cutting files.

The body pieces were dry-fitted, then assembled around two steel pipes for internal support. Feet and hands were 3D printed in ABS, with custom flanges and cavities modeled in Rhino to ensure precise placement on the MDF base.

Once fully assembled, the entire structure was smoothed, sealed, and painted. The TV head and body remain detachable via copper tubing to allow for transport.



CHALLENGES & DISCOVERIES

One of the key challenges was determining the best way to slice the organic body form into millable segments without sacrificing detail. Another technical hurdle came when moving the sculpt from ZBrush to Rhino, requiring repairs in Magics to create a single solid mesh. Additionally, working with spray paints on foam demanded testing to avoid material degradation.

Through this process, Pennington gained hands-on experience with RhinoCAM, CNC machining, and advanced mesh workflows—skills she now carries forward into future work with *The Good People* brand.



CREDITS

Artist & Designer: Brooke Pennington
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Support & Feedback: Kat Wilson and Aaron Nelson – Hudson Valley Additive Manufacturing Center