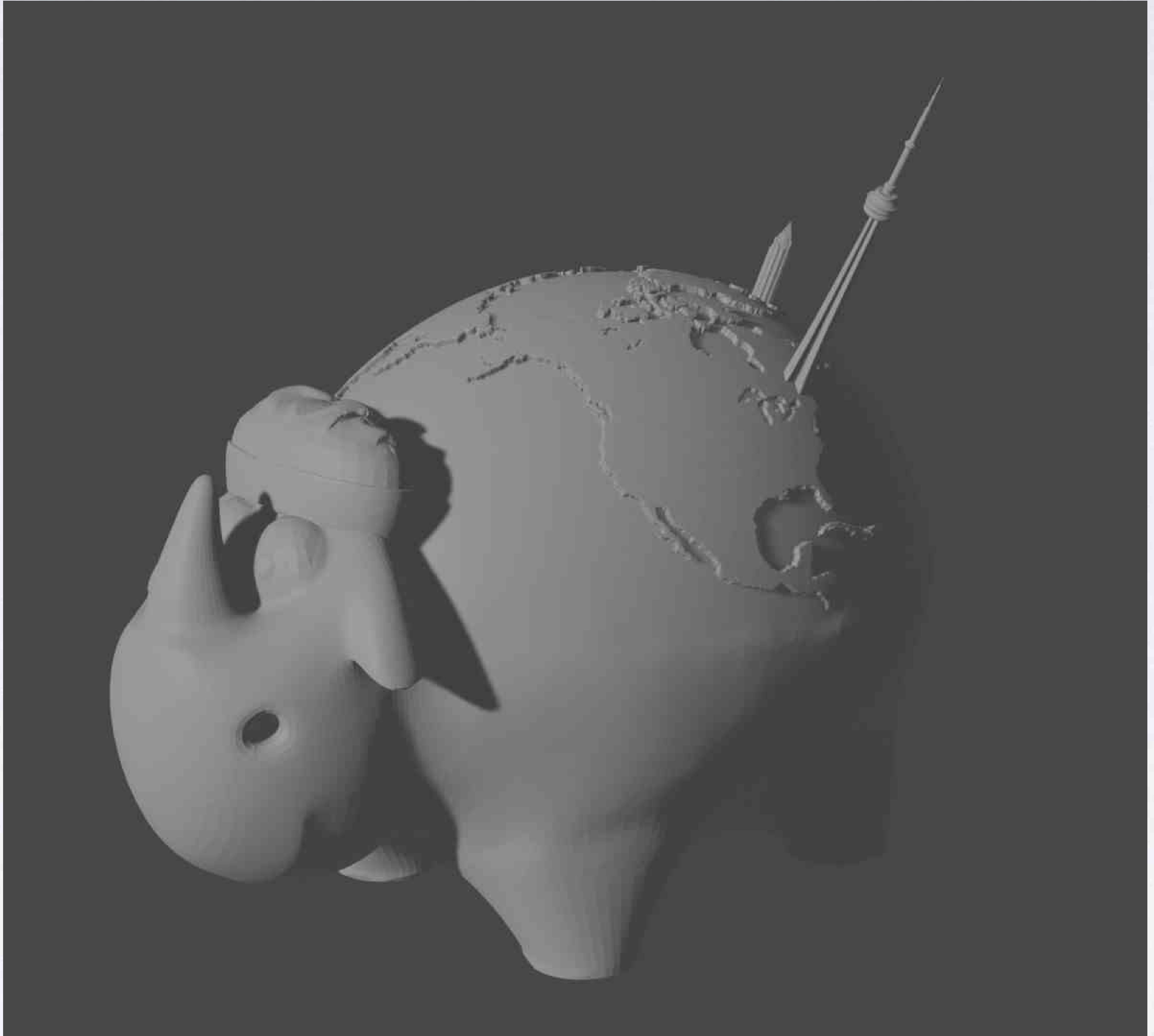


PROJECT 2:

Rhino is the base for everything



Denis Schörnig - 22092945 |

DATT-3940: Modelling for 3D Fabrication

By Roch Smith

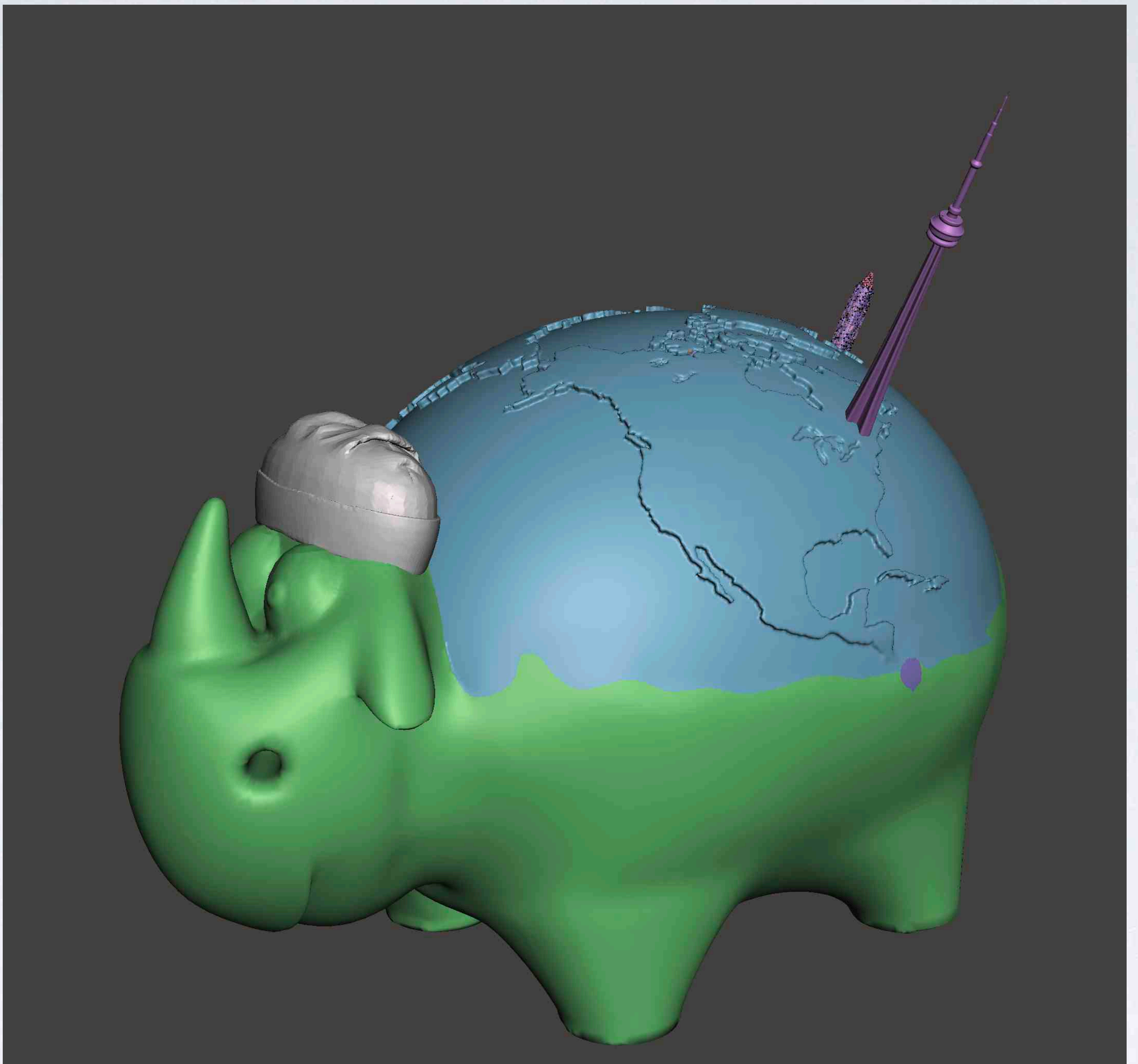
DESCRIPTION

For my second project, I aimed to create a unique keepsake that would serve as a memento of my exchange semester in Toronto. The idea was to craft an object featuring a globe, alongside two prominent skyscrapers or towers symbolizing both my hometown and Toronto. To achieve this, I selected the CN Tower and the Frankfurt Exhibition Tower as ideal choices. Given my familiarity with Rhino from my coursework, I decided to incorporate a cartoony rhinoceros as the base for this project, giving it a beanie to represent the cold Canadian weather.

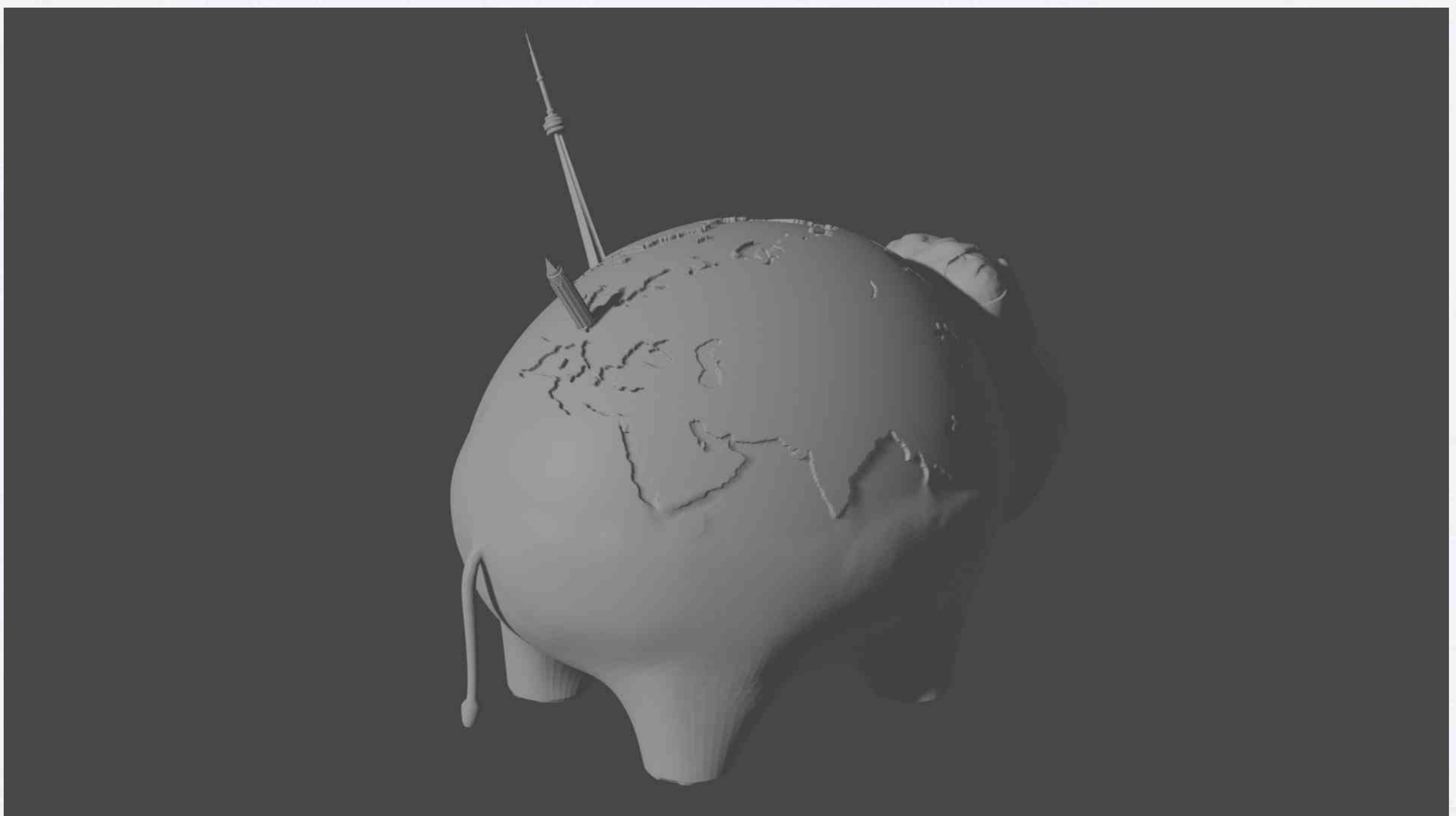
The project's inception involved some initial sketches to conceptualize the design. Once I had a clear vision of the models I needed, I embarked on extensive research to locate suitable 3D models. This phase sometimes proved challenging as I had to balance the search for affordable models with ensuring their quality. Nevertheless, with persistence, I managed to download the required models.

Subsequently, I proceeded to combine and scale the models within Rhino, enabling me to begin the work in Meshmixer. For instance, the CN was in segments so it could be printed, but I needed it as a single object. To achieve this, I employed Rhino's Boolean operations. This process was replicated for each component. Once all the models were prepared, I imported them into Meshmixer and began the assembly process. To ensure a smooth and successful merge, I converted all the objects into solid forms and inspected and repaired them using the Inspector tool.

The rhinoceros base was adjusted to accommodate the beanie and complement the rhinoceros head shape. Following this, I imported the globe and modified its shape to fit on the rhinoceros's back. The final step was to perform Boolean operations to unify these elements. This required some adjustments, such as enlarging the rhino's belly and addressing the interior of the globe. After some trial and error, I successfully performed the Boolean operation, creating a cohesive form. Subsequently, I refined the shape to flatten the rhino's belly and carefully positioned the buildings, uniting them with the rest of the assembly through Boolean union operations.

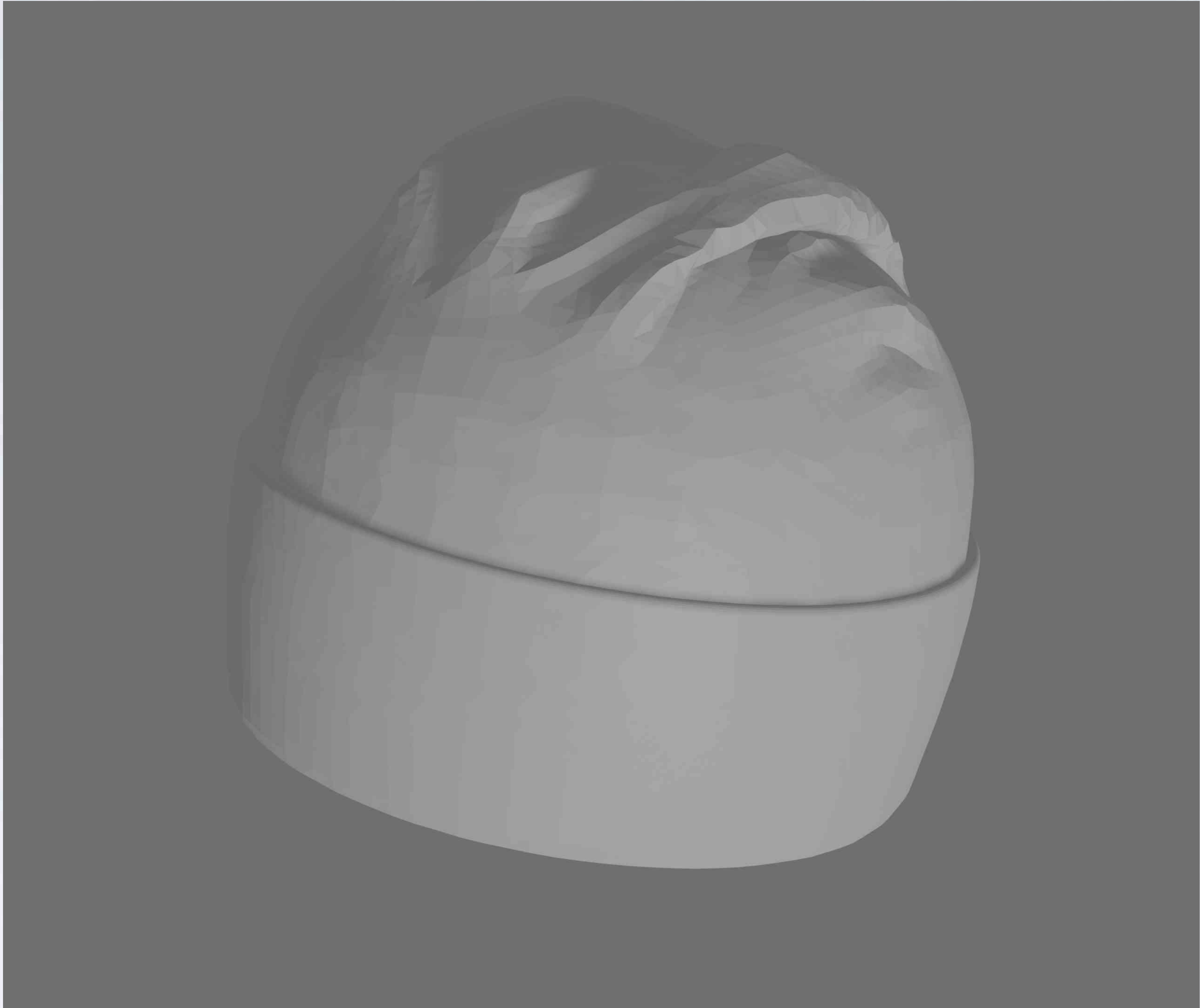


Screenshot Meshmixer



Render Blender

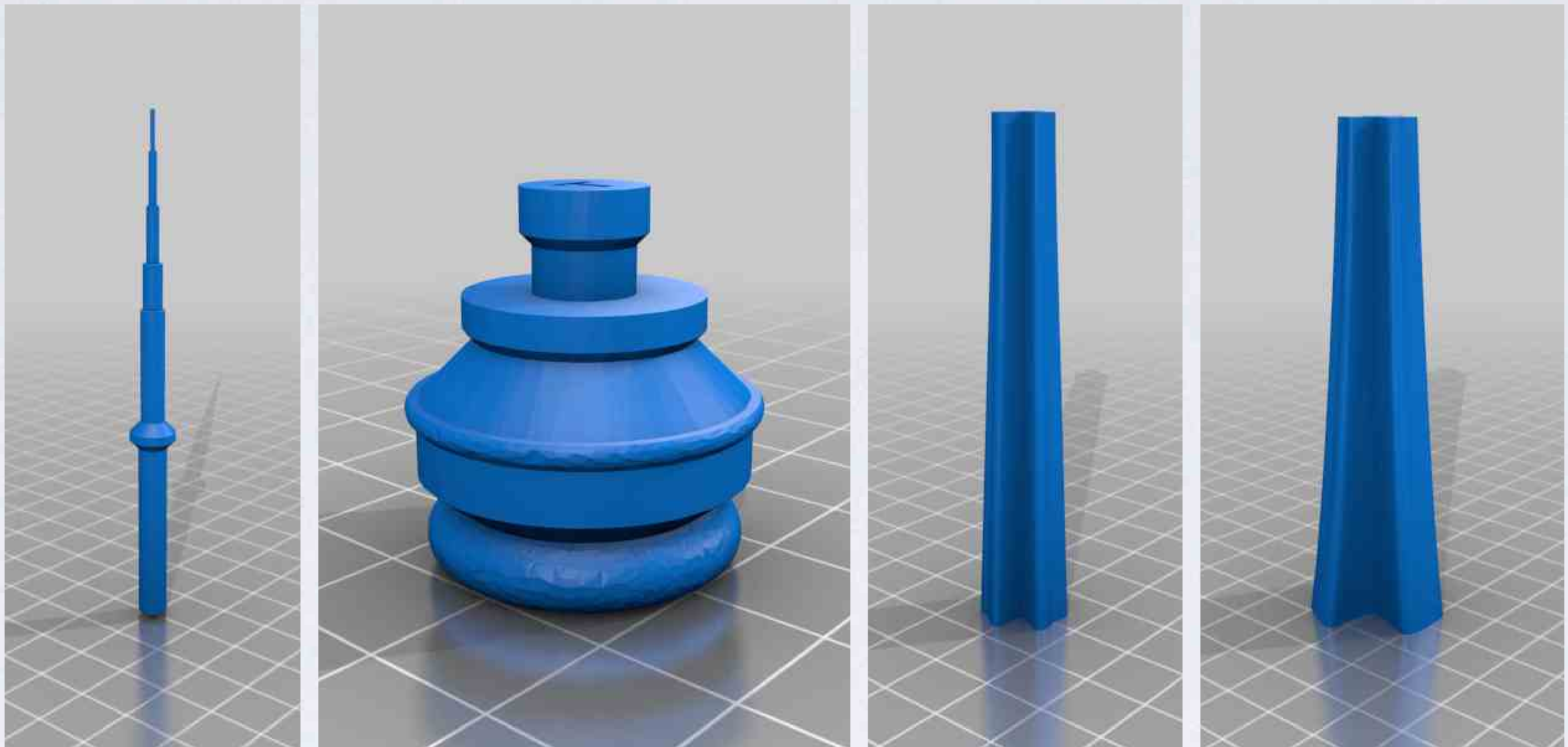
ORIGINAL BEANIE MODEL



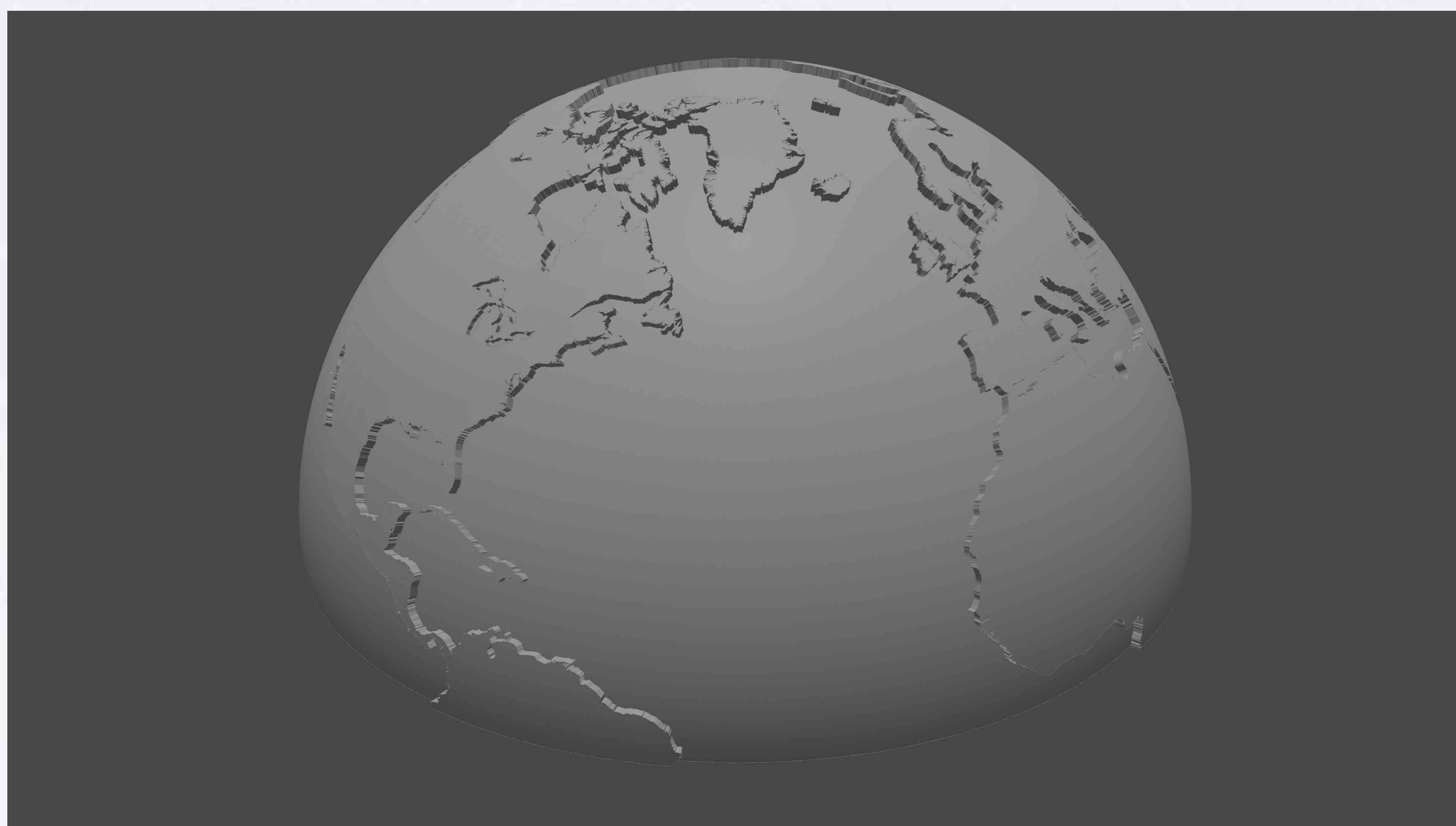
ORIGINAL RHINO MODEL



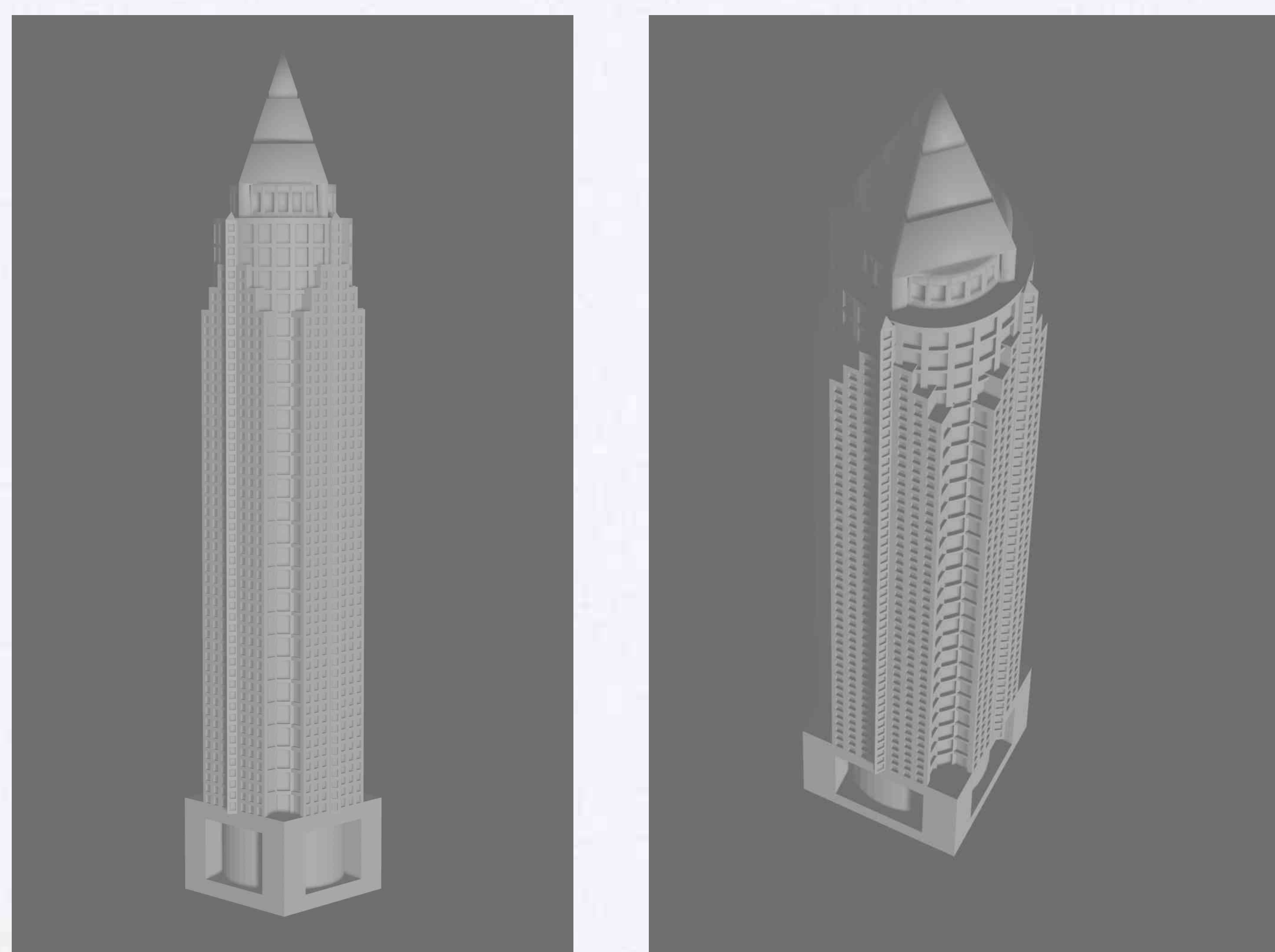
ORIGINAL CN-TOWER MODEL



ORIGINAL NORTH GLOBE MODEL



ORIGINAL MESSETURM MODEL



Digital Sculpture Library Metadata Schema

Category: User Generated Object

Entity	Description
catalog_ID_number	DS_DATT_3940
title	Rhino is the base for everything

Descriptive Metadata for Digital Object	
object_size_x_axis	3.31"
object_size_y_axis	2.13"
object_size_z_axis	2.78"
object_copyright_license_type	All rights reserved
object_copyright_date	N/A

Descriptive Metadata for Digital Object	
subject_keywords	hardsurface, mixed, organic
collection	DSL Collection

Technical Metadata	
file_size	567.3mb
software	Meshmixer
creation_date	8th November 2023

Administrative Metadata	
software_operator	Denis Schoernig
metadata_operator	student
institution	York University
open_access	No

LINKS OF ORIGINAL OBJECTS

CN-Tower:

<https://www.thingiverse.com/thing:5600997>

North-Globe:

<https://www.printables.com/model/37340-world-globe/files>

Messeturm Frankfurt:

<https://www.thingiverse.com/thing:4603880>

Rhino:

<https://grabcad.com/library/rhino-12>

Beanie:

<https://sketchfab.com/3d-models/beanie-ff6dc83c818c4e2aa722cb89e6ada577>