

# VR Training for SRP Distribution Personnel

## SRP's VIPs (Virtual Integration Project)

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### Project Scope

This project develops a VR training simulator for SRP distribution systems, placing users in an interactive virtual neighborhood with realistic electrical equipment.

Users can move through the environment and interact with components to see how power is distributed. The experience is designed to be immersive and easy to explore.

The system provides real-time feedback to explain each component's role. It offers a safe, engaging, and expandable way to train without field exposure.

### Training Safety Impact

The aim of this project is not only to support SRP in training its workforce but also to demonstrate how VR technology can be applied more broadly in the utility sector to improve education, safety, and operational readiness.



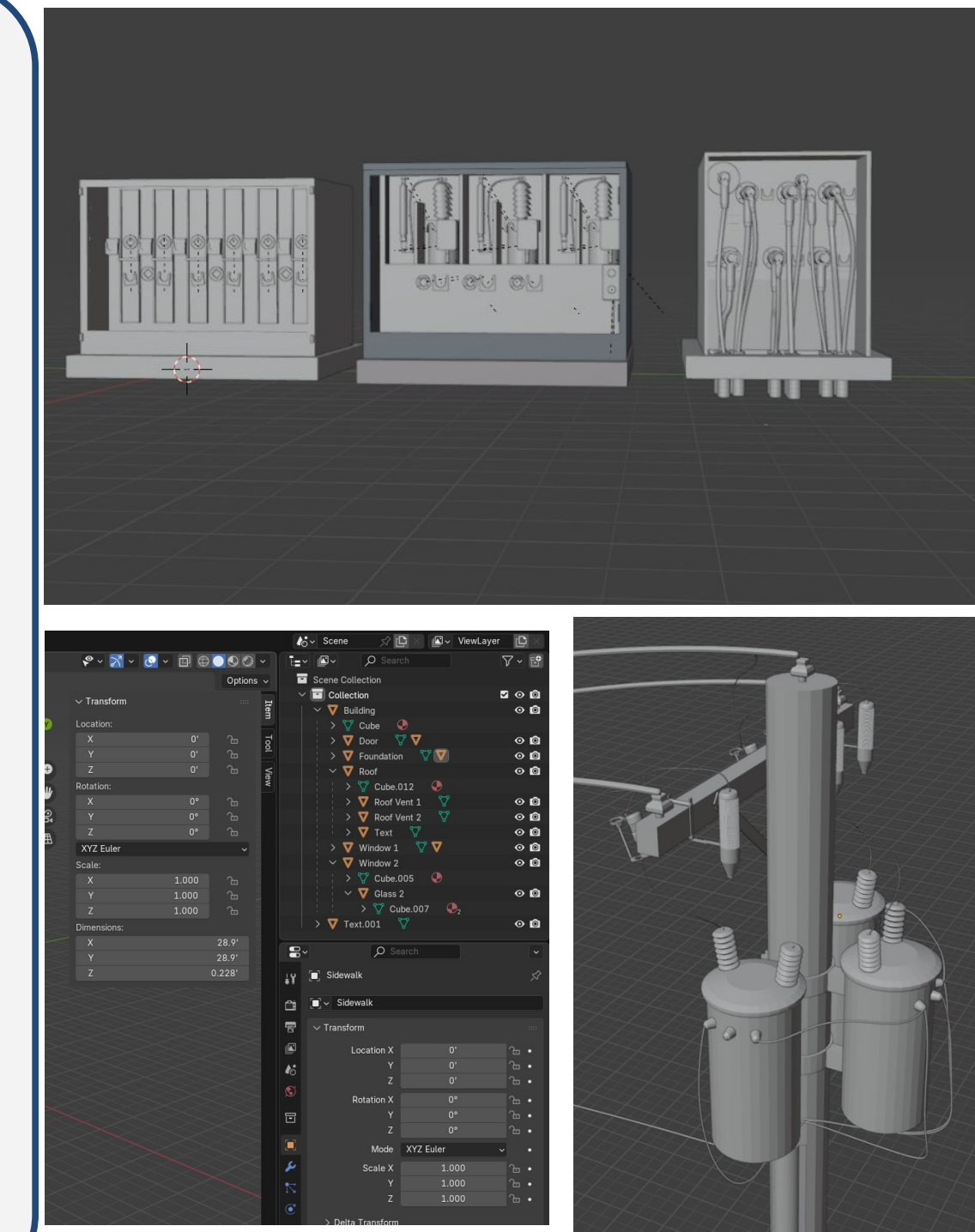
The VR scenario offers a risk-free, hands-on learning experience that improves comprehension, increases engagement, with no electrical hazards compared to traditional training methods.

### 3D Modeling

Blender is the software of choice for all of the modeling that was done in this project. It was mainly chosen due to being free along with being more user friendly than competitors.

To keep the models scale accurate the concrete pads and poles were made to scale utilizing the SRP Distribution Standards. Everything else was referenced to the pad and pole to keep the dimensions roughly consistent.

Throughout the project the models were improved iteratively starting out with no detail. From the base models detail was added slowly until they reached an acceptable level.



### Training Scenario

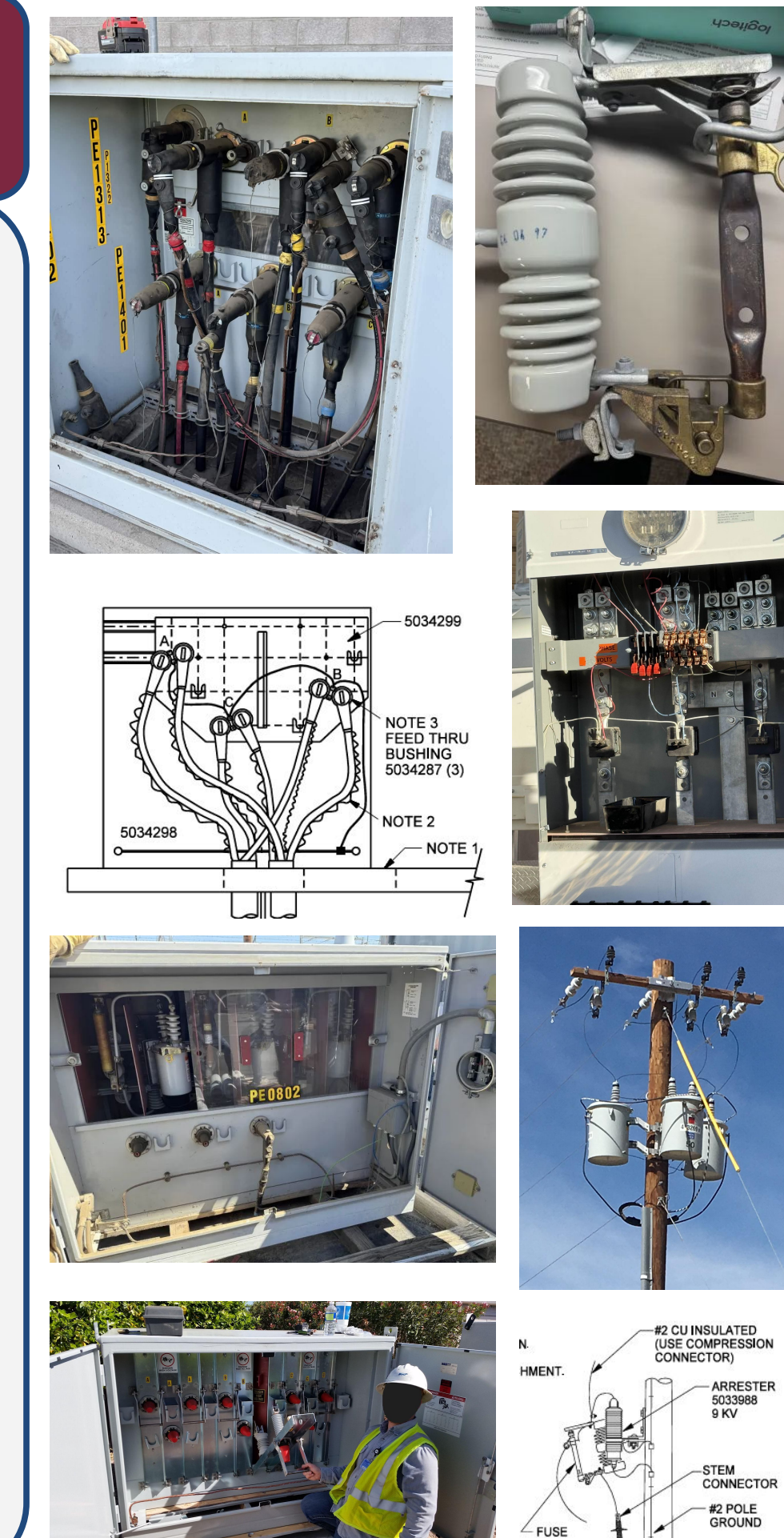
Unity is the game engine used to create the VR simulation and layout. All of the models were imported into Unity and arranged to form the distribution system, residential and commercial areas, and supporting infrastructure.

In Unity, C# scripts were used to implement functionality. This includes VR movement, equipment interactions, and collisions. Other details such as lighting, materials, and textures were added to improve realism.



### Electrical Equipment

- 1 Ph Pad-Mounted Transformer.
- 1 Ph Pole Mounted Transformer.
- 3 Ph Pad-Mounted Transformer.
- Pad-Mounted Fusing Enclosure.
- Pad-Mounted Switching Enclosure.
- Gang Operated Switching Pole.
- Pad-Mounted Capacitor Bank.
- 3 Phase Distribution Pole.
- 3 Phase Pole Riser.
- Meters



### VR Hardware

The system uses the Meta Quest 3s, a standalone VR headset that provides an immersive experience without external hardware. Users interact using handheld controllers for movement and equipment interaction.

