The cone, the sphere, and the cylinder are geometric solids derived from a circle. Within our contemporary digital framework a cone is a singular object that is a built-in component in most software platforms, a primitive. The same could be said for the sphere or the cylinder. However, these massive and apparently singular forms are composed of sets of simpler geometric elements: the circle and the point. In the history of architectural drawing, the ability to break down the cone, the sphere, and the cylinder into specific geometric properties has made these figures not only significant formal elements but also drawing instruments in their own right. Stereotomy, the drawing practice used to develop the shape of stones within vaults is a central example of this. Within this drawing practice cones were used to draw toroidal vaults, hemispherical domes, and simply to break down spheres into developable surfaces. These three simple solids, the cone, the sphere, and the cylinder can therefore be understood as geometric elements capable of describing forms of a higher degree of complexity then themselves. By extending this logic into the digital realm, it is possible to imagine geometric primitives not as something to be aggregated, intersected with, or subtracted from but as drawing instruments. Drawings instruments that are capable not only of creating simulated three-dimensional form, but also describing form through flat two-dimensional variants of orthographic drawing.

This project begins with the study and development of the techniques of drawing with solids exemplified in Guarino Guarini’s Architettura civile (1735). Cones, spheres, and cylinders are each reduced to sets of two-dimensional relationships and then redeployed as instruments of distortion. Guarini’s techniques were then used to create an orthographic drawing based on Robin Evan’s analysis of Philibert de l’Orme’s chapel at Anet. These techniques were then written into a computational process that allowed for the production of multiple variations of distorted curvature. All of the drawings, are flat, orthographic two-dimensional constructions that utilize a single line-weight for all information. Orthographic projectors, originating circles, and deformed nameless curves all appear with the same value, allow the drawing as an object to function independent of a specific representational outcome. Thereby reframing orthography as a drawing process in which the entirety of its components are read as potential form.

As orthographic projection and by extension descriptive geometry face a near extinction in most architecture curriculums, this project proposes a reimagining of their basic tenants within a digital framework. While simulated three-dimensional space continues to offer new potentials for formal invention and communication, the limits of flat two-dimensional orthographic drawings have yet to be tested.
PRIMITIVE DRAWINGS

The purpose of this section is to illustrate the potential of primitive drawings as a means of communication in various contexts. The drawings are created using simple geometric shapes and lines, which are then transformed and manipulated to create complex visual compositions. The drawings are intended to convey information in a clear and visually appealing manner.

The drawings are created using a combination of digital and analog techniques. The basic shapes are drawn using digital tools, and then manipulated using traditional analog methods. The resulting drawings are then scanned and digitalized for further editing.

The drawings are categorized into several sections, each focusing on a different aspect of primitive drawings. These sections include:

1. **Form and Structure**: This section focuses on the use of basic geometric shapes and lines to create dynamic and figurative compositions. The drawings are designed to convey a sense of movement and energy.
2. **Color and Texture**: This section explores the use of color and texture to enhance the visual impact of the drawings. The combinations of color and texture are used to create a sense of depth and realism.
3. **Abstract and Conceptual**: This section focuses on abstract and conceptual themes, using primitive drawings to explore and convey complex ideas.

The drawings are not constrained by traditional constraints of art and design. They are created with the intention of challenging common perceptions and expectations of visual communication.

**References**