The Epiphany System
An Interdisciplinary Collaboration Between Computer Science and Architecture

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The Epiphany System is an interdisciplinary collaboration between computer science and architecture. Our goal is to break free from the traditional definitions of how a building is designed. We will provide the Epiphany System with a loosely defined architectural form and through its application will achieve numerous distinctive final forms.

To accomplish our goal we defined a virtual camera that allows us to render a video that represents what a person viewing the architectural form would see as they move around the form. The dimensions of the virtual form will then be directly related to the camera/person.

Every time the camera/person moves to a new point along a virtual path the physical dimensions of the form will also change. Hence by defining the relationships between the camera and architectural form coupled with an infinite number of paths the camera/person could take leads to an infinite number of unique forms free from any preconceived notions about shape and dimensions of the final form.

The form will be designed entirely with the Maya software. The C++ coding language is used to create custom Maya nodes, allowing us to link the width, length, and height of the individual walls to the camera. In addition Maya “bones” have allowed us to take the right angles of the base form and create smooth flowing curves across the entire form. Plan to place openings at predetermined locations has been replaced with the goal of creating openings based on where the camera is pointed at certain points along the path. At first every expression will be constantly and dramatically manipulating the form. Expressions are programmed to stop one by one. Each time an expression is stopped the location of camera represents a point of epiphany by finalizing one dimension of the form in such a way that the relation between the camera/person and the form conform to perfect golden ratios creating an aesthetic final design unlike any other.