ALGORITHMS AND DESIGN DESCRIPTIONS FOR RELATIONAL MODELING
VARIATION AND CONSTRAINS

Parametric models allow variations but are constrained to fixed topologies.

Time compound effect of building a model increases with complexity of the model.

Unpredictable situations.
Insertion of the hardware (cable-cramp) was done manually.
Do not translate the changes in global geometry.
THE IMPORTANCE OF THIS INVESTIGATION

- Creating information for digital fabrication
  
  2D information for 3D assembly

- Expediting monotonous tasks

- Utilizing the computational power for precision and calculation
Applications: Rhinoceros 3.0, MS Excel, and Digital Project

Input: Design surface

Method: points extraction algorithm
Designer creates a design description:

- Joint angles
- Dimensions
- Geometric information

Design description of joint
JOINT CONSTRUCTION

Digital Project environment
Phase 02

**INSERTION OF DESIGN DESCRIPTIONS**

[joint details]

Design description computed

Design description inserted as joints

*3D JOINT INSERTION*

Completed joint for insertion
CURRENT FINDINGS

Rapid Generation of detailed information for fabrication

Reusability of designed components that adapt to specific conditions

Expedites laborious tasks
ZCorp model of joints
ZCorp model of joints
Joints need to know of their neighbors and the global system.

Joints need to know about the material which it secures.

Joints need to be able to update its location and orientation based on any surface or renegotiation.
CUSTOMIZATION vs STANDARDIZATION

Every single joints are uniquely fabricated to satisfy local conditions.

Taking advantage of the recent advancement in digital fabrication.

Standardize the details to avoid increase in cost.

Single detail accommodates various local conditions.