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Design Optimization for Manufacturing for Farrowing System

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Design Optimization for Manufacturing for Farrowing System

Client: FarrPro Inc., Des Moines, Iowa

Problem Statement

- Designing a Farrowing system
- Keeping it manufacturable
- Keeping it functional
- Keeping it within cost parameters

Objectives

- Use materials that have the ability to withstand caustic environments estimated 3-5 years.
- Meet or Exceed current safety standards set by prototype.
- Meet Production Cost Goals to maintain profitability.

Constraints

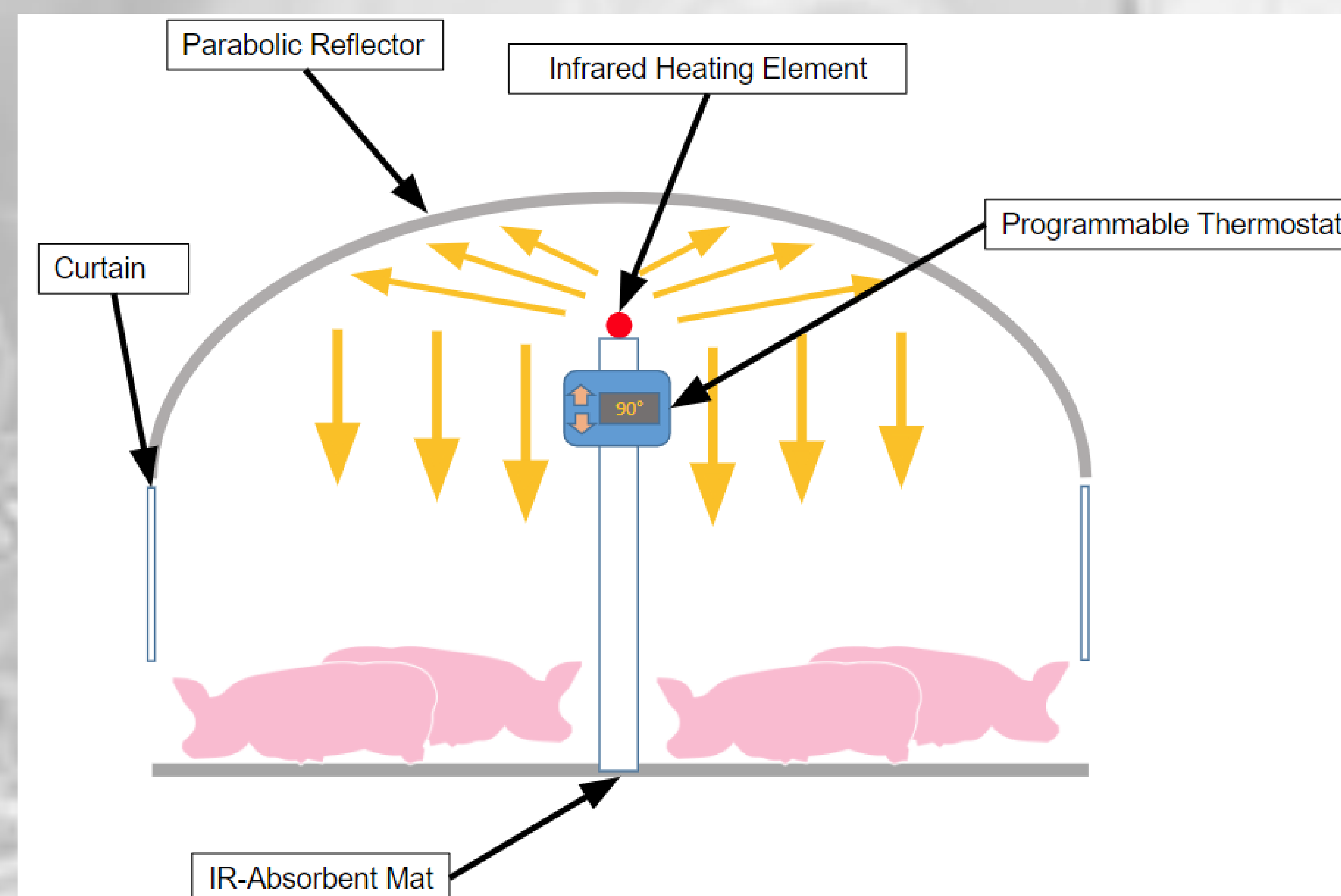
- Limited Funding
- Timeline
- Material handling a caustic environment
- Distance from Prototype
- Varied knowledge on subject matter

Scope

- Designing a heat retaining shield to cut the cost on energy, yet still provide comfort to piglets.



Current Prototype being used



Visual Representation of the Farrowing System.

FARRPRO

Methods

- Gathering data from field prototypes
- Perform a Cost Analysis on system
- Use a computer designing software for design, and manufacturability solutions.

Proposed Solutions

- Injection Molding
- 2 Hinged Doors
- Single injected shield
- Extrusion
- Thermo molding
- Different light sources

Major Outcomes

- Reduce cost of production by 4% per crate
- More manufacturable unit
- Durable and functional Crate

Benefit to Client

- Improved manufacturability
- Finding cost effective replacements to benefit the bottom line.