

Background

- Lakeland was a **thriving African American community (early 1900s)** disrupted by redevelopment policies.
- Community feedback** (Lakeland Neighborhood Plan) emphasizes: Memorialization of history and spaces for intergenerational connection
- Site conditions:**
 - Zoned RSF-65 (residential)
 - Outside floodplain, minimal flood risk
 - Possible environmental concerns (past auto repair use)
- Soil (USDA data):**
 - Well-drained Elsinboro soils
 - Suitable for shallow foundations
- Design constraints:**
 - ≤ 25% impervious surface
 - ADA accessibility
 - Compliance with IBC, MBPS, ASCE 7

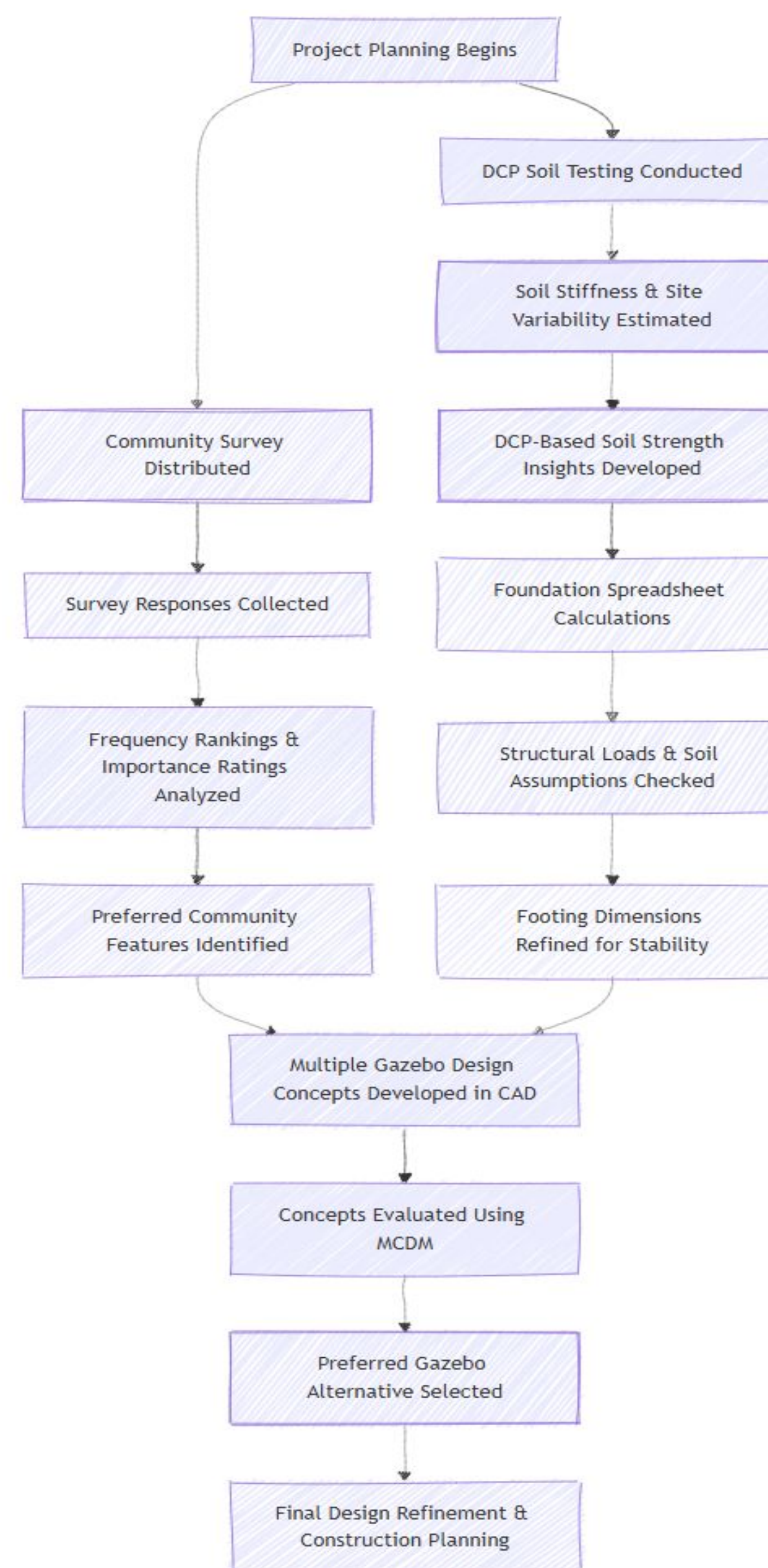
Problem Definition

A 6,036-square-foot vacant lot at 5004-5006 Pierce Avenue has been identified for redevelopment into a community space that supports healing, remembrance, and reconnection. The goal of this project is to design a gazebo pavilion that honors Lakeland's history while providing a functional and inclusive space for community gathering. The design must balance memorialization, accessibility, and sustainability while meeting key constraints, including a limited \$30,000 budget, residential zoning requirements, and compliance with ADA and building codes.

Acknowledgements

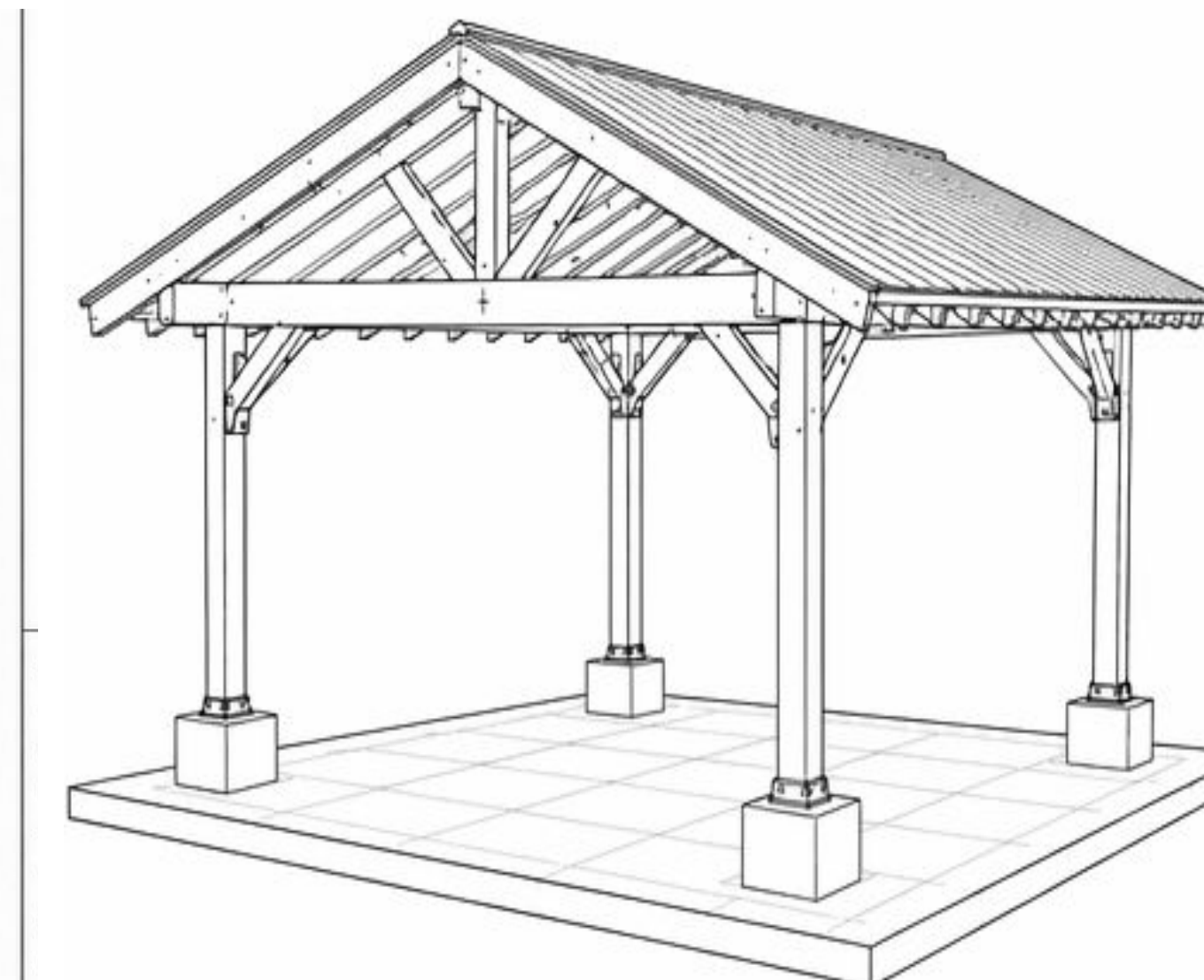
We would like to thank for Dr. Deb Niemeier and Dr. Gretchen Bella for their guidance and support with this project's process. We would also like to thank the City of College Park Department of Planning & Community Development and the Lakeland community for their support and feedback throughout the project.

Method



Category	Mean Rating	Interpretation
Accessibility for all ages & abilities	4.69	Extremely important
Historical storytelling/memorial elements	4.46	Very important
Sustainable, low-maintenance materials	4.51	Very important
Safety and lighting	4.23	Important
Shade and comfort	3.95	Important

Final Design



Our team has developed a drawing set for a pavilion structure using CAD software. The drawing set showcases the footing/foundation top view and pavilion elevation/section view. The pavilion design was developed based on our initial concept design, site constraints, project goals, and applicable Maryland design criteria. This project transforms a vacant lot into a community-centered space for remembrance and connection in the Lakeland neighborhood. By incorporating community input into the design, the pavilion park reflects local priorities while promoting accessibility and social interaction.

Design Calculations & Analysis

The listed parameters are based off of data within the Kidde Consultants geotechnical exploration report and Professor Mohamed Aggour's foundation design calculation research.

Based on our site analysis and design parameters we perform iterations utilizing Excel to determine the footing design dimensions to ensure that our design did not exceed the allowable bearing capacity.

Parameter	Symbol	Value	Unit
Soil Unit Weight	γ	120	pcf
Cohesion	c	0	psf
Friction Angle	ϕ	30.00	degrees
Footing Depth	D_f	3	ft
Factor of Safety	FS	3	
Groundwater depth	D_w	10	ft
Design			
Footing Width (for It.)	B	3	ft
Required Footing Width	B_{req}	1.66	ft
Required Footing Area	A_{req}	2.78	ft ²
Footing Length	L	3	ft
Actual Footing Area	A	9	ft ²