



# Equitable Accessibility in Historic Contexts



REINVENTING THE MODERN  
23RD - 27TH OF JUNE 2024

## Disability History

# Disability Rights

UC Berkeley is the home of the Disability Rights movement



# Ed Roberts

- Accepted to UC Berkeley as a transfer student in 1962
- First severely physically disabled student admitted to the university – or any university
- Housed in university hospital at Cowell Hall



Hal Zukus (left) and Ed Roberts (right). Two students whose placement at UC Berkeley began a conversation about advancing rights for disabled students.

# Social Barriers and Responses

Ed Roberts  
admitted to UC  
Berkeley, first with  
severe disability

Cowell Hospital's  
3rd floor  
established as  
accessible housing

Additional disabled  
students admitted

Institution seeks  
control over choices  
made by growing  
number of disabled  
students

Program established  
in partnership with CA  
Dept. of Rehabilitation

Stringent participation  
requirements enacted

Students share  
experiences and  
organize for  
independence

Rolling Quads created to  
act as collective voice to  
demand fairness

Protest drives state to  
extend access to  
program

**Progress made in  
a context without  
legal protection  
for disabled  
students**



# §504 & CCRAB

- 1977. Provided legislative protection for disabled students
- From §504 of the Rehabilitation Act:
  - “No otherwise qualified individual with a disability in the United States, ...will be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance...”
- 1974–Today: Coordinating Committee for the Removal of Architectural Barriers (CCRAB)

# 504 Sit-In (1977)



# Disabled Students Residence Program

- 1974-2014. Taught disabled UC Berkeley students skills required for independent living (managing attendant care, disability management)
- Attracted generations of disabled students
- UC Berkeley's history of disability access and activism fostered and environment which invited me (among many other disabled people) to find an academic and professional home at the institution





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## Disability Models

# Defining Disability | ADA

A person who has a physical or mental impairment that substantially limits one or more major life activities, a person who has a history or record of such an impairment, or a person who is perceived by others as having such an impairment.

The ADA does not specifically name all the impairments that are covered.

1. <https://www.ada.gov/cguide.htm>

# Defining Disability | Models

Intention	Lens	Social Outcomes	Built Outcomes
Moral stewardship	Protection	<ul style="list-style-type: none"> <li>• Infantilization</li> <li>• Institutionalized people</li> </ul>	<ul style="list-style-type: none"> <li>• Hospitals</li> <li>• Asylums</li> <li>• Prisons</li> </ul>
Medical management	Correction	<ul style="list-style-type: none"> <li>• Validation, but only through institutionalized processes <sup>2</sup></li> <li>• “Inspiration”</li> </ul>	<ul style="list-style-type: none"> <li>• Rehabilitation centers</li> <li>• Medical offices</li> </ul>
Societal awareness	Equalization	<ul style="list-style-type: none"> <li>• Civil rights legislation</li> <li>• Generational (gradual) acceptance <sup>3</sup></li> </ul>	<ul style="list-style-type: none"> <li>• Accessible infrastructure</li> </ul>

2. Simon Brisenden (1986) Independent Living and the Medical Model of Disability, Disability, Handicap & Society, 1:2, 173-178, DOI: 10.1080/02674648666780171

3. Terry Hyland (1987) Disability and the Moral Point of View, Disability, Handicap & Society, 2:2, 163-173, DOI: 10.1080/02674648766780171

# Disability Models | Capability Model

Disability = f(Functional Limitation) x f(Environment)<sup>4</sup>



- Societal expectations inform design thinking and design outcomes in the built environment.
- The built environment encodes societal expectations into forms which resolve functional limitations into disabilities.

Design decisions create & address disability

4. Pineda, Victor Santiago. 2010.

# Disability Models | Capability Model

Intention	Lens	Social Outcomes	Built Outcomes
Unlock human potential	Integration	<ul style="list-style-type: none"><li>• Incorporation into planning and designing social programs and spaces,</li><li>• Normalization.</li></ul>	<ul style="list-style-type: none"><li>• Adaptable, flexible, built environments.</li><li>• Deeply integrated methods and modes of circulation (inside and outside of buildings).</li></ul>

When the study of disability is reduced to rehabilitative and compensatory technologies—the planning of grab bars and wide doorways—it becomes a subject of little human interest, relegated to technicians.

– Cheryl Davis





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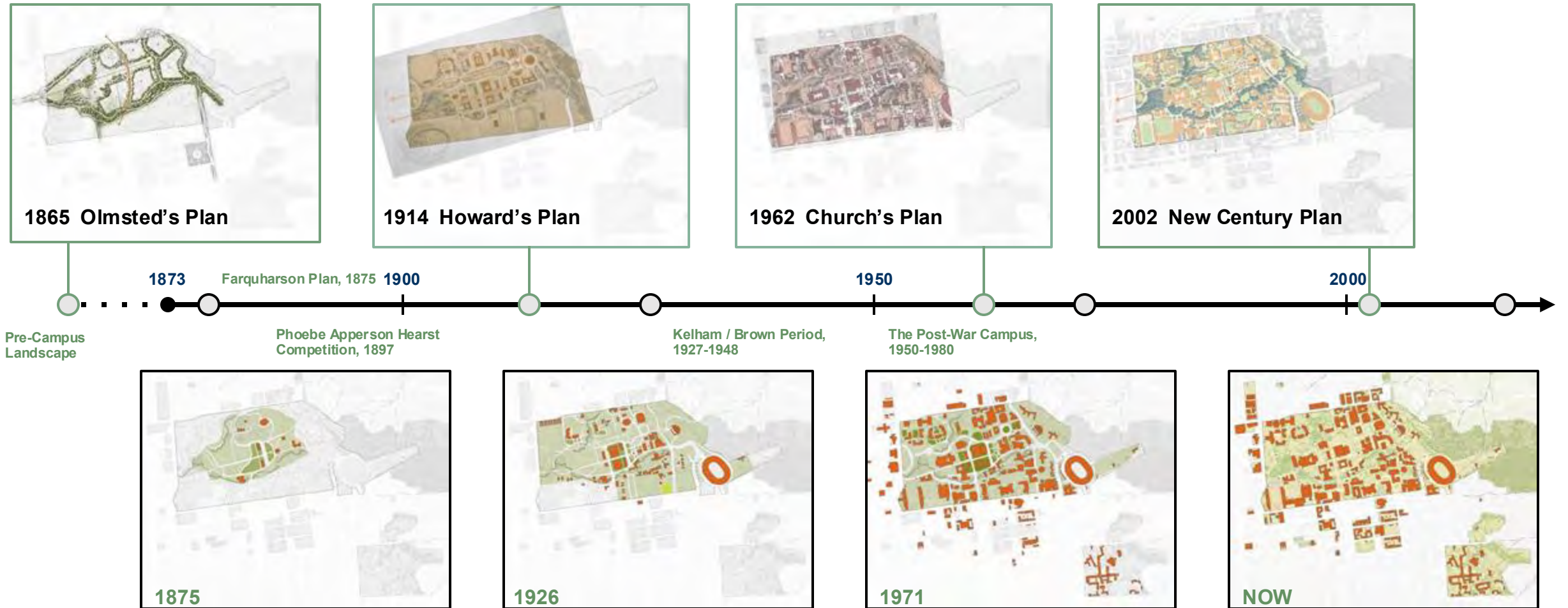
# Campus Development

# Context | Natural Features

- Topography & Strawberry Creek Branches
- The original shaping forces of the land are still present
- The eastern portions of Campus Park, Clark Kerr Campus, and Smyth Fernwald have steep slopes
- The western parts of Campus Park and Clark Kerr campuses step down in gradual terraces
- Generally, buildings sit on terraces that step down with steep slopes on the east



# Evolving Visions





# Olmsted Plan

1865

Olmsted's plan envisioned a picturesque, park-like campus:

- Framed the campus boundary with Strawberry Creek, and introduced terraces
- Introduced an east-west axis aligned with the Golden Gate
- Piedmont Way as part of the plan



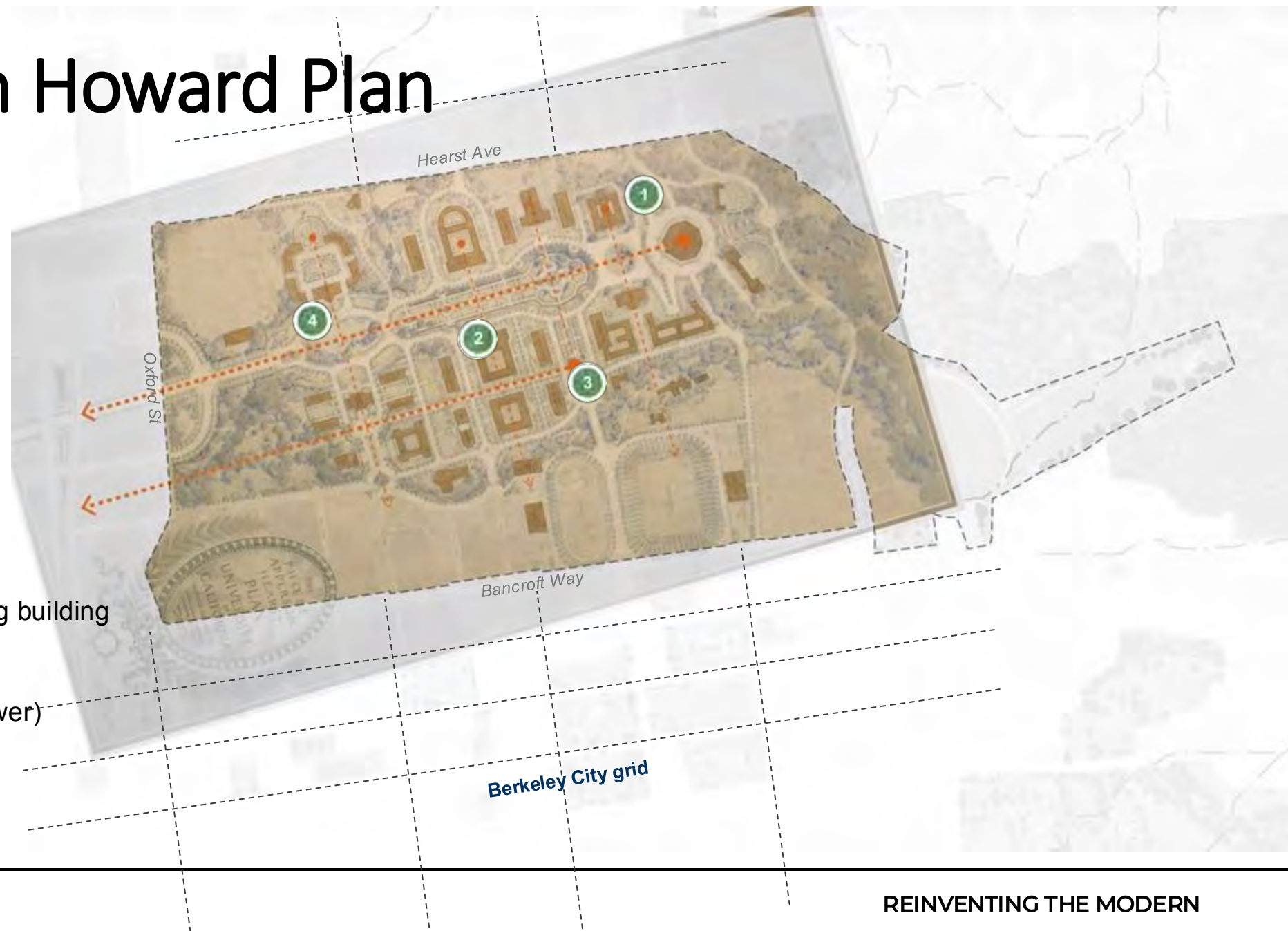
# John Galen Howard Plan

1905

(Revision of the  
'Competition' Plan)

Combined Olmsted's  
Plan and Beaux-arts  
style

- ① Hearst Memorial Mining building
- ② Doe Memorial Library
- ③ Campanile (Sather Tower)
- ④ Wellman Hall





# Alterations for Access

Campus Master Plans mostly predate requirements for accessibility in the built environment

- Federal: §504 Rehabilitation Act (enforced in 1977) , PROWAG (2023), & ADA (1990)
- State: California Building Code
- Campus: Campus Design Standards

Accessibility achieved in the majority of campus facilities

- 189 buildings located on the core campus
- 184 of those have wheelchair accessible entrances
- One notable exception: Architects & Engineers Building

# Architects and Engineers Building



# We've Tried Everything

Except a comprehensive approach.

# Public Right-of-Way Accessibility Guidelines (PROWAG)

**August 2023** - The U.S. Access Board published new guidelines under the Americans with Disabilities Act (ADA) and the Architectural Barriers Act (ABA) that address access to sidewalks and streets, crosswalks, curb ramps, pedestrian signals, on-street parking, and other components of public right-of-way.



# Accessible Paths and Places Master Plan



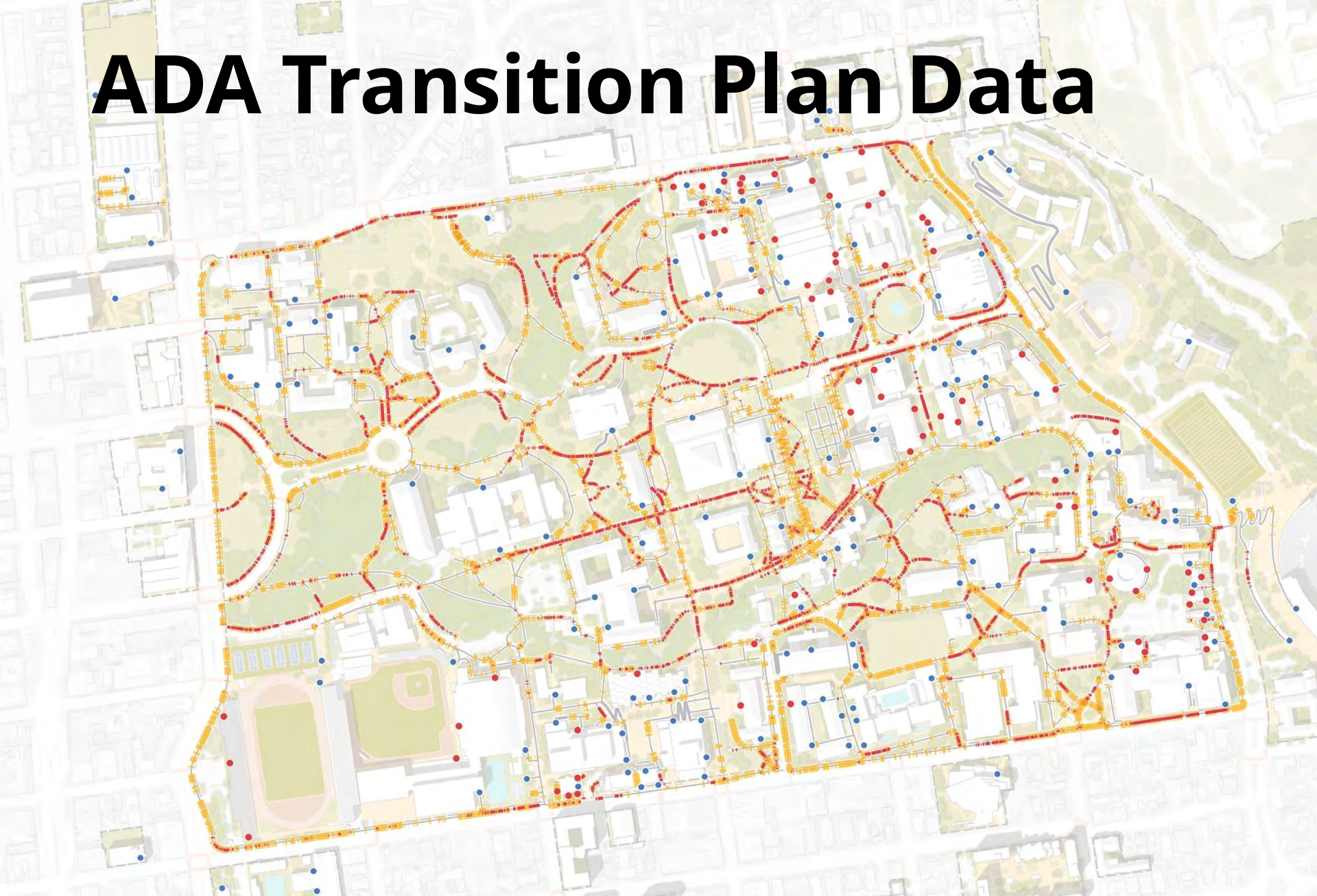
# UC BERKELEY ACCESSIBLE PATHS AND PLACES MASTER PLAN

The Accessible Paths and Places Plan transcends the traditional landscape master plan to establish a future that centers disability across campus.



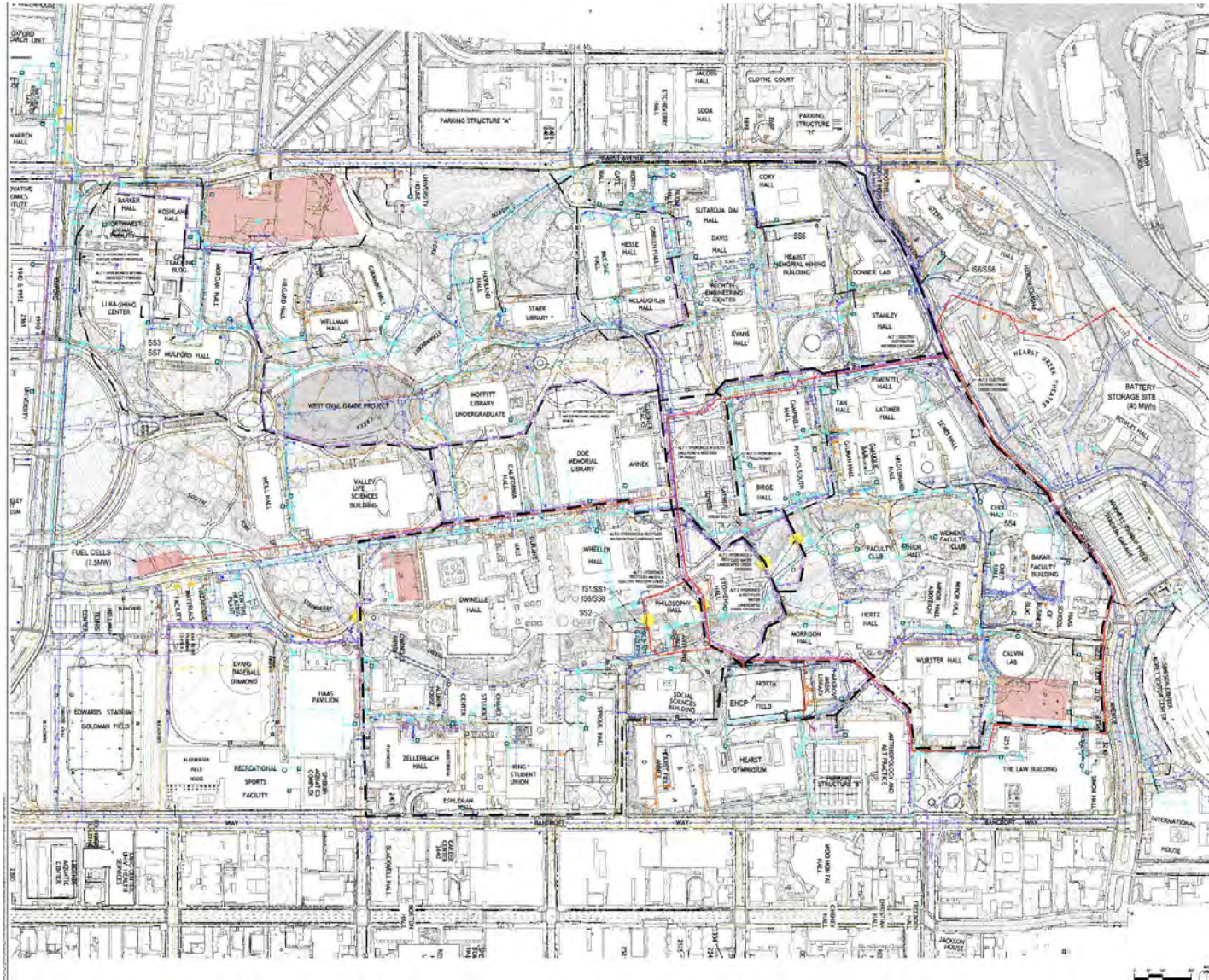


# ADA Transition Plan Data





# Central Thermal Plant





# Existing Paving Survey





# Campus Leadership





# PRINCIPLES AND GOALS



Create a comprehensive network of accessible pathways, primary entries, and open spaces within the Campus Park

- GOAL 1.1**  
Achieve compliance to the ADA and the California Building Code.
- GOAL 1.2**  
Design all primary pathways and primary building entries to be accessible.
- GOAL 1.3**  
Create a barrier-free environment that embraces best practices and principles of universal design.
- Goal 1.4**  
Develop design solutions that address the needs of the broadest spectrum of disabilities, including physical, visual, auditory, cognitive, and invisible.

Address long-standing injustices that people with disabilities have faced in navigating the built environment

- GOAL 2.1**  
Honor UC Berkeley's critical role in the Disability Rights Movement, and build upon the past efforts of disability rights advocates.
- GOAL 2.2**  
Realize equal access for people with disabilities to navigate the campus without having to take a separate route.
- GOAL 2.3**  
Create a safe and welcoming campus environment for all disabled people, including those who identify as women, people of color, LGBTQIA+, or belong to other marginalized communities.

Increase legibility of campus landscapes and pathways and promote simple and intuitive navigation and wayfinding

- GOAL 3.1**  
Develop a hierarchy of pathways that clearly indicates the primary path of travel, through the use of paving, materials, and simplification of unnecessary pathways.
- GOAL 3.2**  
Create a comprehensive and accessible network of paths and open spaces that connect to accessible primary building entrances.

Result in outcomes that align with multiple priorities

- GOAL 4.1**  
Integrate with the university's plans for updating its infrastructure network and facilities, and coordinate with other ongoing physical planning efforts on campus.
- GOAL 4.2**  
Leverage open space and pathway improvements to elevate the image and experience of the public realm.
- GOAL 4.3**  
Rather than design towards one specific group's needs, create integrated design solutions that harmonize the needs of different disabilities.

Position UC Berkeley as a leader in creating a fully accessible campus

- GOAL 5.1**  
Leverage the process and product of this effort to establish a precedent for other institutions to follow in evaluating and addressing ADA compliance of the campus exterior.
- GOAL 5.2**  
Reinforce the long-term vision for the campus established in the Campus Master Plan and LRDP.





## DEFINING THE PROBLEM

ADA Transition Plan data revealed 42,000+ moments of pathway non-compliance across campus with many buildings being inaccessible from the landscape.



- 1 Pathway running slopes should be no steeper than 5% (1:20)

Running Slope Non-Compliance



- 2 Where 5% is not feasible, achieve ramps of up to 8.3% (1:12) with railings

Cross-Slope Non-Compliance



- 3 Where paths of travel intersect - i.e. plazas, landings - maximum cross slope is 2% (1:48 by code)



- 4 Where the building entrance is not accessible, there should be accessible connections with slope (maximum 1:12 for ramps)

Indoor/Outdoor Accessible Connections



Non-Compliant Running Slope



Stairs as Primary Pathway



Inaccessible Creek Crossing



Non-Compliant Cross Slope



Non-Compliant Intersection



Inaccessible Building Entry





## DEVELOPING A HUMAN-CENTERED DESIGN APPROACH

Addressing accessibility is an opportunity to find a human-centered design language - one that understands the preferences of all users.



Precedent: UMass Boston Harborwalk Park



Precedent: Moore Square



Precedent: Sather Gate, UC Berkeley



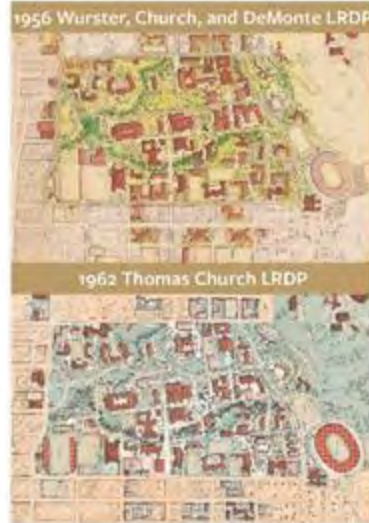
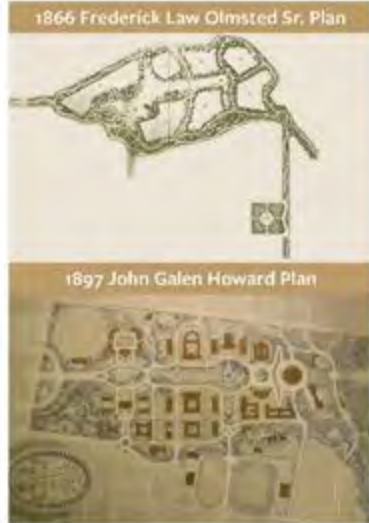
Precedent: Watertown Braille Trail





## CREATING A NEW FRAMEWORK FOR ACCESSIBILITY

New primary accessible pathways create compliant, barrier-free connections across campus and harmonize with Olmsted Sr., Howard, and Church plans.







## WAYFINDING AND MATERIAL STRATEGY

The accessibility framework articulates a multi-sensory, simple, and intuitive wayfinding strategy and creates new tactile material guidelines.



1/4" Grooves  
Perpendicular to Path  
of Travel Indicate E-W  
Pathways

- Intuitive Wayfinding Framework**
- Primary N-S Accessible Route
  - Primary E-W Accessible Route
  - East Slope Buildings
  - Major Landmarks
  - Major Open Spaces
  - Acoustic Cues (Sound)
  - Olfactory Cues (Smell)



3/8" Grooves  
Parallel to Path  
of Travel Indicate  
N-S Pathways

## Materials and Mockups

Material mock up feedback centers disabled user experiences



Hacking highway grooving machines to test a range of tactile finishes



Subtle variations in dimension were tested to arrive at an optimal material strategy





# Wayfinding Legibility







## ACCESSIBILITY STRATEGY

Proposed pathways leverage 5% running slopes in graceful meandering alignments, utilize ramps when necessary and create accessible building entrances.



1 Accessible Creek Crossing for Bridge



2 5% Slope, Ramp Interventions When Necessary



3 Accessible Building Entries





## CONNECTIVE CORRIDORS AND PROJECTS

The realignment of primary pathways creates an opportunity to reimagine key open spaces, amounting to 37 discrete projects across 7 corridors.



### Gateway Corridor



### Sather Corridor



### Dana Corridor



### Carillon Corridor



### Upper Corridor



### Central Corridor



### Strawberry Creek Corridor







## FREE SPEECH WAY







## SITE DESIGN AND GUIDELINES

Each of the 37 projects contains plans, sections, cut/fill analysis, site feature summaries, proposed slope strategies, and conceptual cost estimates.





# Hearst Memorial Mining Building





# HMMB: Existing Conditions

- Existing primary entrance is not accessible, requires traversing 14 steps.
- Accessible entrance requires crossing the loading zone and service route, and leads to the basement level.





# HMMB: Existing Access



**Accessible Route**

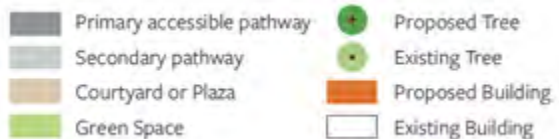
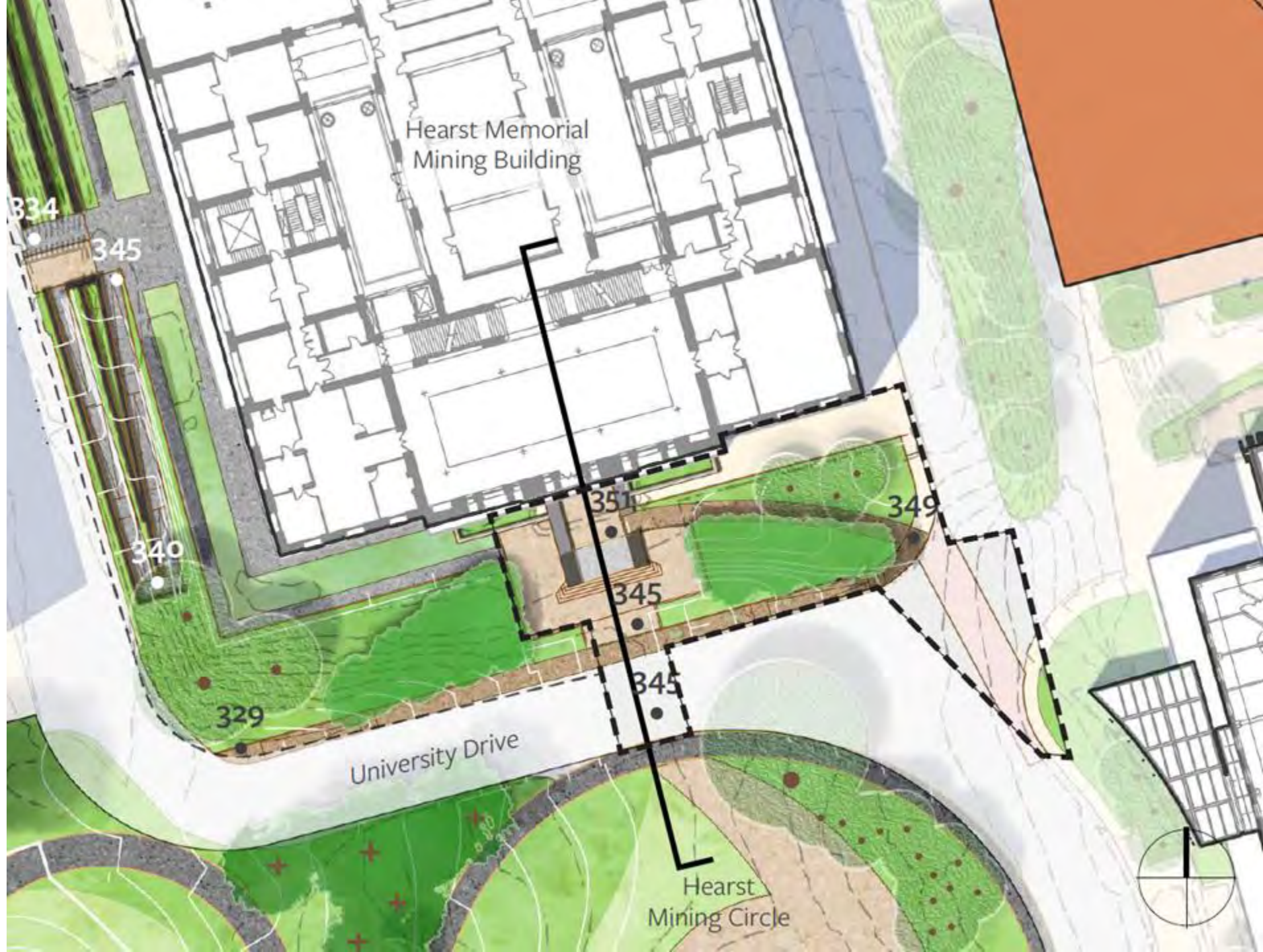


**Non- Accessible Primary Route**



# HMMB: Proposed Solution

- Situates a 5% accessible path from the southeast corner of the site to the main entrance.
- Upper entry plaza is extended to the south to accommodate the new accessible path, with both stairs and hip walls replaced.





# HMMB: Proposed Solution

