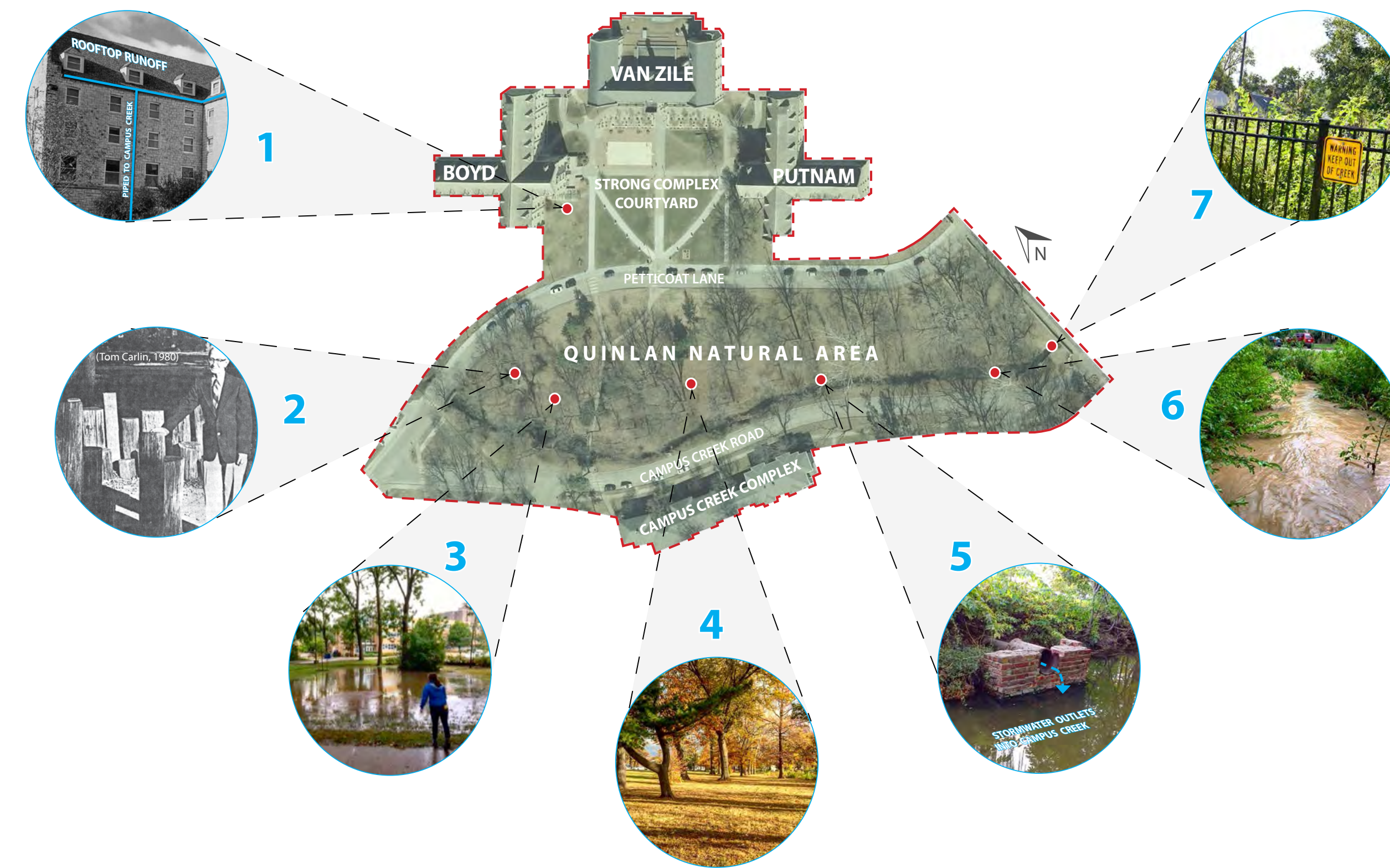


# Perspective of Bioretention Cell



View Looking Northeast from Bioretention Cell

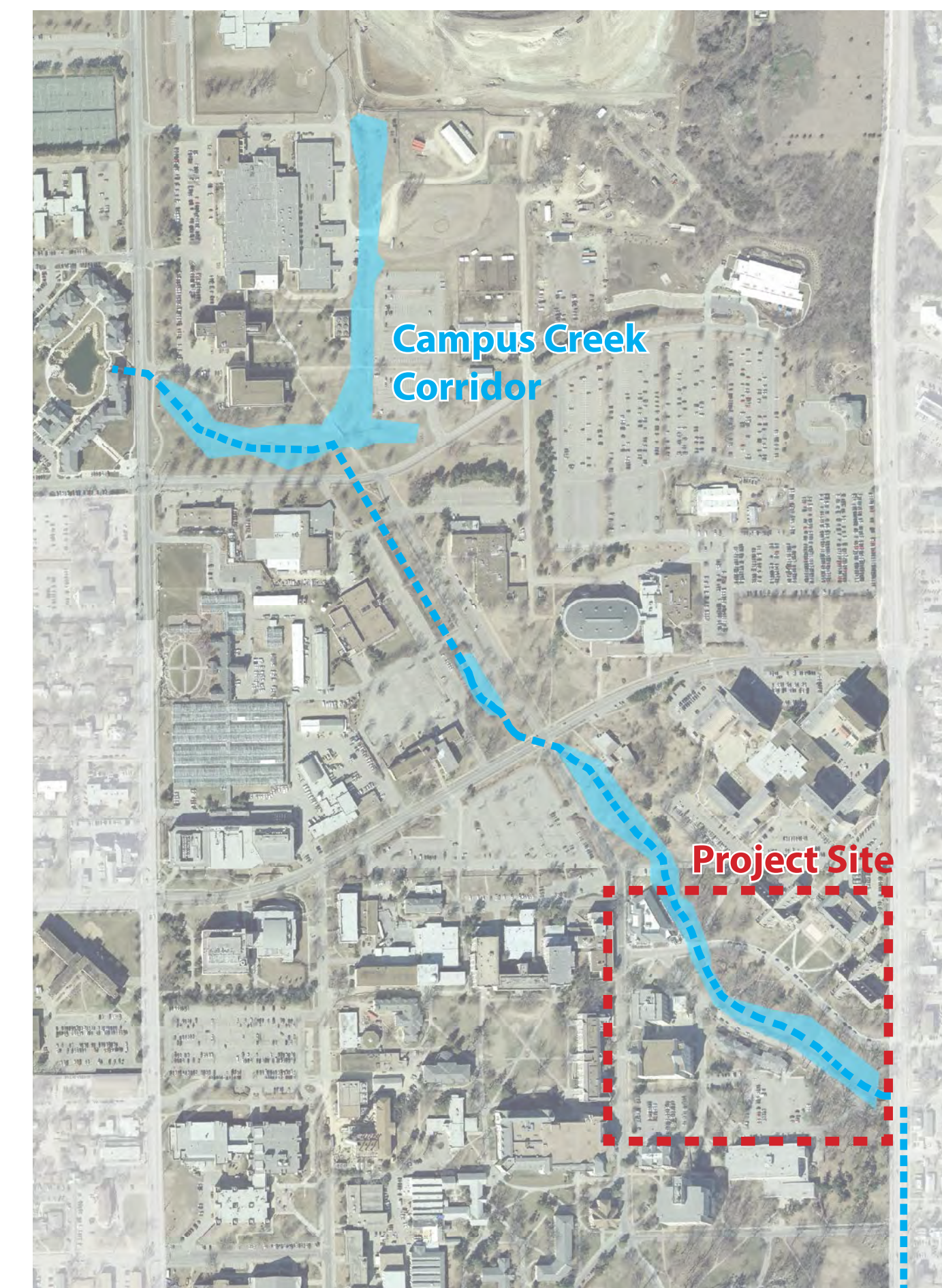
# Existing Site Character and Problems



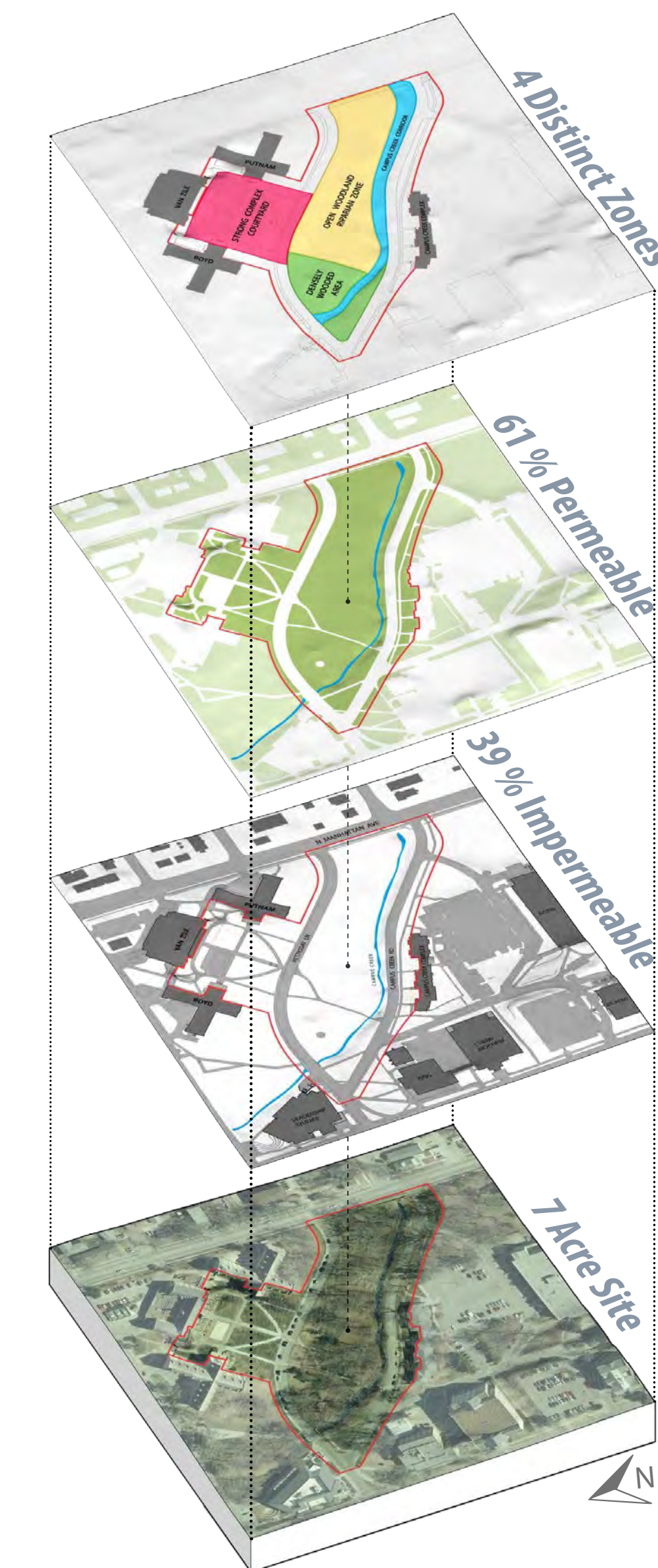
- 1. Downspouts**  
The proposed design reroutes downspouts and diverts stormwater into the large 10,000 gallon cisterns.
- 2. Historical Remnants**  
In the late 1970s Dr. Quinlan, the universities first landscape architect, installed tree stump seating features throughout the site
- 3. Stormwater Ponding**  
Even during minor storm events, rainwater ponds in certain areas of the site, creating large swaths of muddy and unusable land
- 4. Picturesque Woodland**  
One of the strongest assets of the site is its mature riparian woodland, a feature that the proposed design preserves and enhances
- 5. Pipe Outlets to Creek**  
Runoff from multiple sources is directly piped into the creek through old underground structures
- 6. Flash Flooding**  
Climate change is altering weather patterns such that more extreme rain events occur in less time, creating a persistent problem of flooding
- 7. Safety Warnings**  
City Officials as well as Facilities Staff have posted signs and erected fences warning people to keep away from the creek

## Site Context

The project site is located in the City of Manhattan, Kansas on the Kansas State University Campus. Situated at the end of the Campus Creek corridor, the proposed design interventions help minimize flooding by slowing water through infiltration and storage. With support from facilities staff, the site was selected because of the immediate attention required to solve the recurrent flooding issues, as well as the opportunities it affords to the community as a mature woodland and campus green space.



## Pre-Design Analysis



- Existing Site Areas**  
Currently, the site is characterized by four distinct zones. To the west there is a densely wooded area (green). The Strong Complex courtyard (pink) is enclosed by the residence halls. There is a open riparian woodland (yellow). The area directly along Campus Creek is a riparian corridor which is overrun with invasive weeds and remains largely unusable to the public due to frequent flooding
- Permeable Surfaces**  
Permeable surfaces - including turfgrass, shrub beds, and the riparian corridor - cover **61 percent** of the project site. Currently, the vast majority of the site is vegetated with irrigated turfgrass. Additionally, the riparian corridor of campus creek is overrun with woody invasive species, creating further difficulties in maintenance and management.

- Impermeable Surfaces**  
Impermeable surfaces - including roads, sidewalks, and rooftops - cover **39 percent** of the project site. In accordance with KSU's 2025 Campus Master Plan, campus roadways are being replaced with newly built pedestrian walks. In this transition, there is an opportunity to reduce the area of impermeable surfaces by decreasing the width of paving areas, removing unnecessary sidewalks, and using permeable pavement in strategic locations.

- Project Site**  
This **7.15 acre** site includes both the Strong Complex courtyard, and the Quinlan Natural Area. The Strong Complex courtyard is enclosed by the residence halls of Boyd, Van Zile, and Putnam, which collectively house around 580 students. The Quinlan Natural Area, a historic campus green space, is bounded by the roads Petticoat Lane to the north and Campus Creek Road to the south.

# Rainwater Harvesting Cisterns

