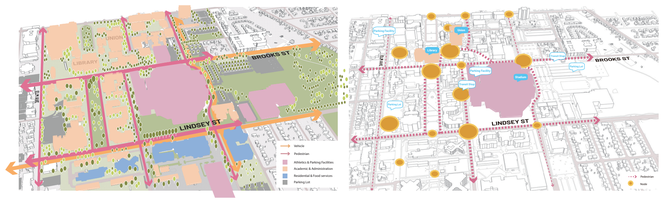
SimBluecity

For a long time, the campus has had ponding issues when it rains, causing problems for the ecological environment and users.After continuous research and investigation, the team put forward a series of design interventions. The goal is to reduce the flood problem on the campus, so that rainwater can be used in the right place, and users can have a better experience.

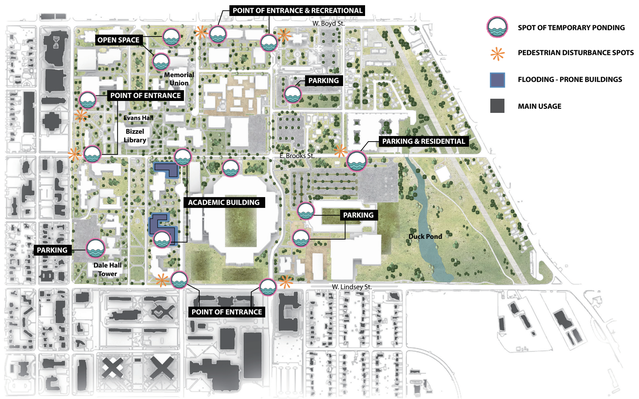
- USING SIMPLICITY INTERVENTION BRINGS THE BLUE (WATER) INTO THE CAMPUS -

SITE INVENTORY & ANALYSIS



CIRCULATION / IMPORTANT BUILDING PEDESTRIAN WALKWAY AND NODES

Pedestrians, bicyclists, and scooter users have the most ways to get around campus. There is an overabundance of pathways an individual could take to get on campus. Most students housed in the dormitories will approach from the south and cross Lindsey Street. Traffic lights, vehicle patterns, and pedestrian usage make this one of the busiest roads around the north campus. Students living in private residences who walk or bike to the north campus approach from the neighborhood in the north, east, and west.

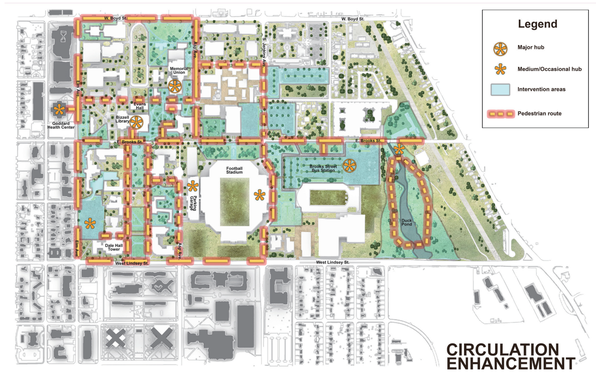


PONDING ISSUE IN THE CAMPUS

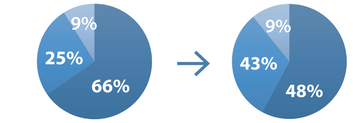
Over the last 2 years, ponding has caused flooding within the lower levels of 2 academic buildings. Both facilities are in the center of the north campus and is often frequented for classes by the student population. In addition to the lower floor flooding of these two academic buildings, there are many other spaces in close proximity to the buildings that have severe ponding issues. Ponding and drainage on OU's north campus is localized to several of the transportation nodes across campus. Many of the transportation nodes are adjacent to campus drainage, academic facilities, or near historic facilities. There have been very few campus interventions to alleviate hydrological issues on campus.

PROPOSED CIRCULATION ENHANCEMENT

IMPROVE PEDESTRIAN ROUTES / INCREASE CAMPUS EXPERIENCE



BEFORE AND AFTER



THE PROPOSED DESIGN CAN RESULT IN

23%

OPTIMIZATION OF RAINFALL INFILTRATION ON THE SITE

CLOSE TO 18% INCREASE IN RAINFALL INFILTRATION

PRECIPITATION RETENTION TIME INCREASED BY ALMOST 25%

ACHIEVING ½ in/hr PERFORMANCE

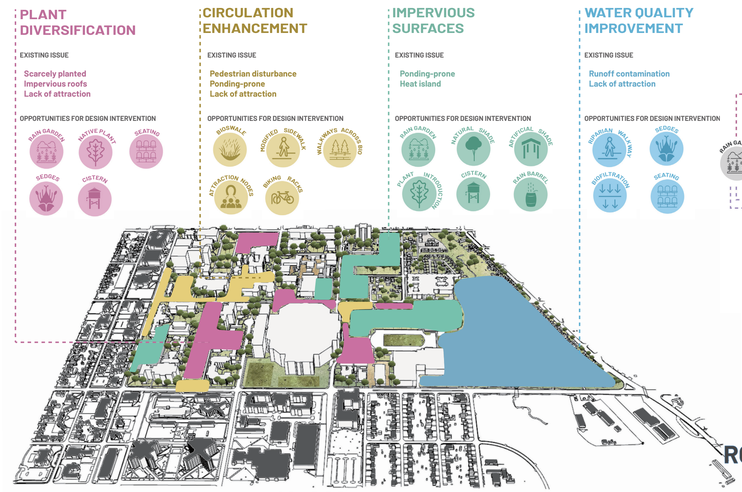
OPTIMIZATION IN EXTREME RAINFALL EVENTS

BY REMOVING THE INTERIOR SIDEWALKS THERE IS A

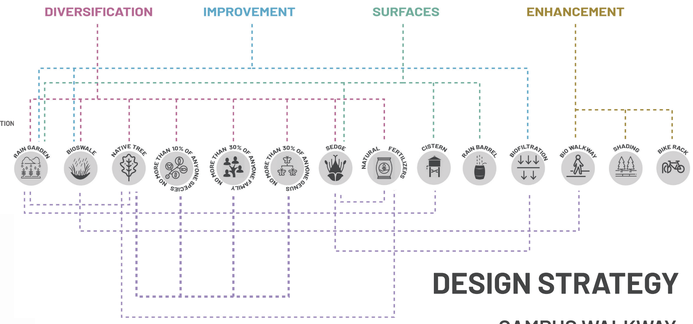
47%

REDUCTION OF IMPERVIOUS SURFACES IN THIS SPACE. THIS WOULD LEAD TO FEWER POOLING AREAS BUT INCREASED WATER RUNOFF INTO THE VEGETATIVE AREAS.

EXISTING ISSUES AND OPPORTUNITIES



CORRELATIONS



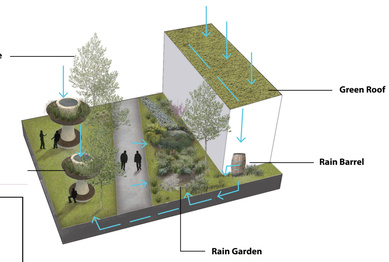
DESIGN STRATEGY

APPROXIMATELY

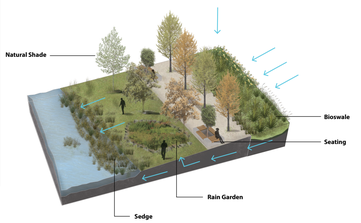
84,650 FT²

ROOFS RUNOFF TREATED BY RAIN BARREL AND CISTERN

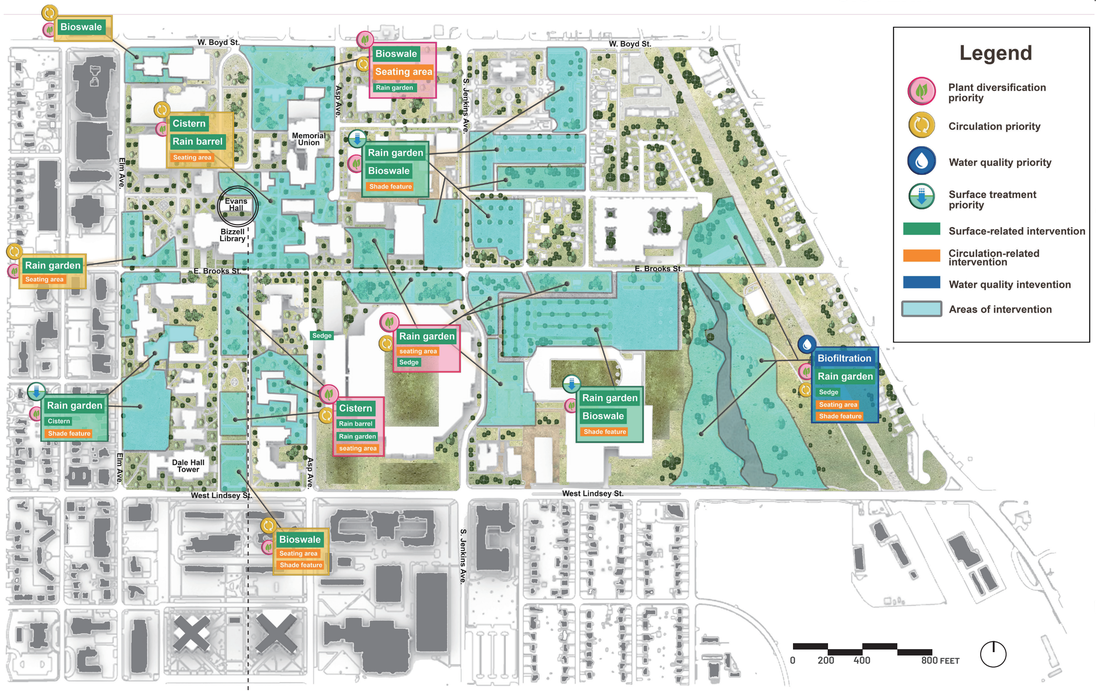
CAMPUS WALKWAY



DUCK POND - BIOFILTRATION



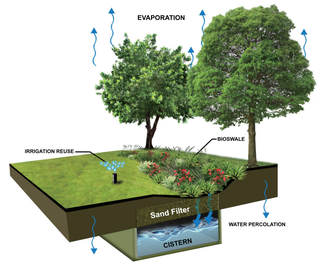
PROPOSED MASTER PLAN



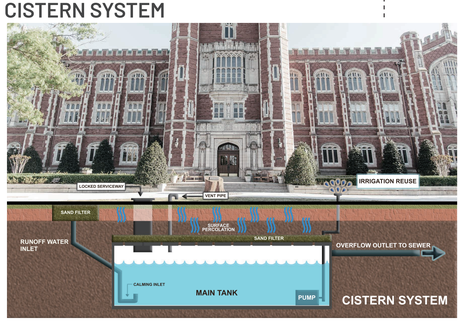
Legend

- Plant diversification priority
- Circulation priority
- Water quality priority
- Surface treatment priority
- Surface-related intervention
- Circulation-related intervention
- Water quality intevention
- Areas of intervention

BIOSWALE WITH CISTERN SYSTEM



CISTERN SYSTEM

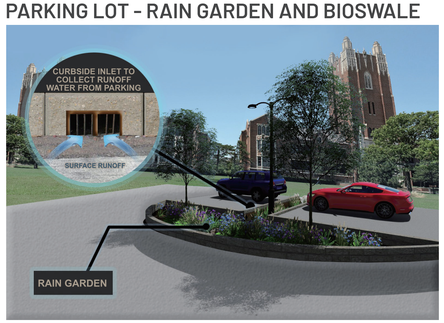


THE CISTERN SYSTEM COULD COLLECT OVER

1100 GALLONS

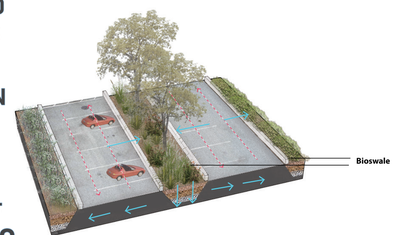
OF USABLE WATER

PARKING LOT - RAIN GARDEN AND BIOSWALE



THE DUCK POND PARKING LOT WILL COLLECT AND RUNOFF 409 GALLONS PER MINUTE OF WATER DURING A .25-INCH RAIN PER HOUR STORM.

THESE TWO GARDENS WOULD BE CAPABLE OF MANAGING OVER 20,000 GALLONS OF WATER



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