Springdale Green

A SUSTAINABLE SITES CASE STUDY

dwg.

Location: Austin, TX United States

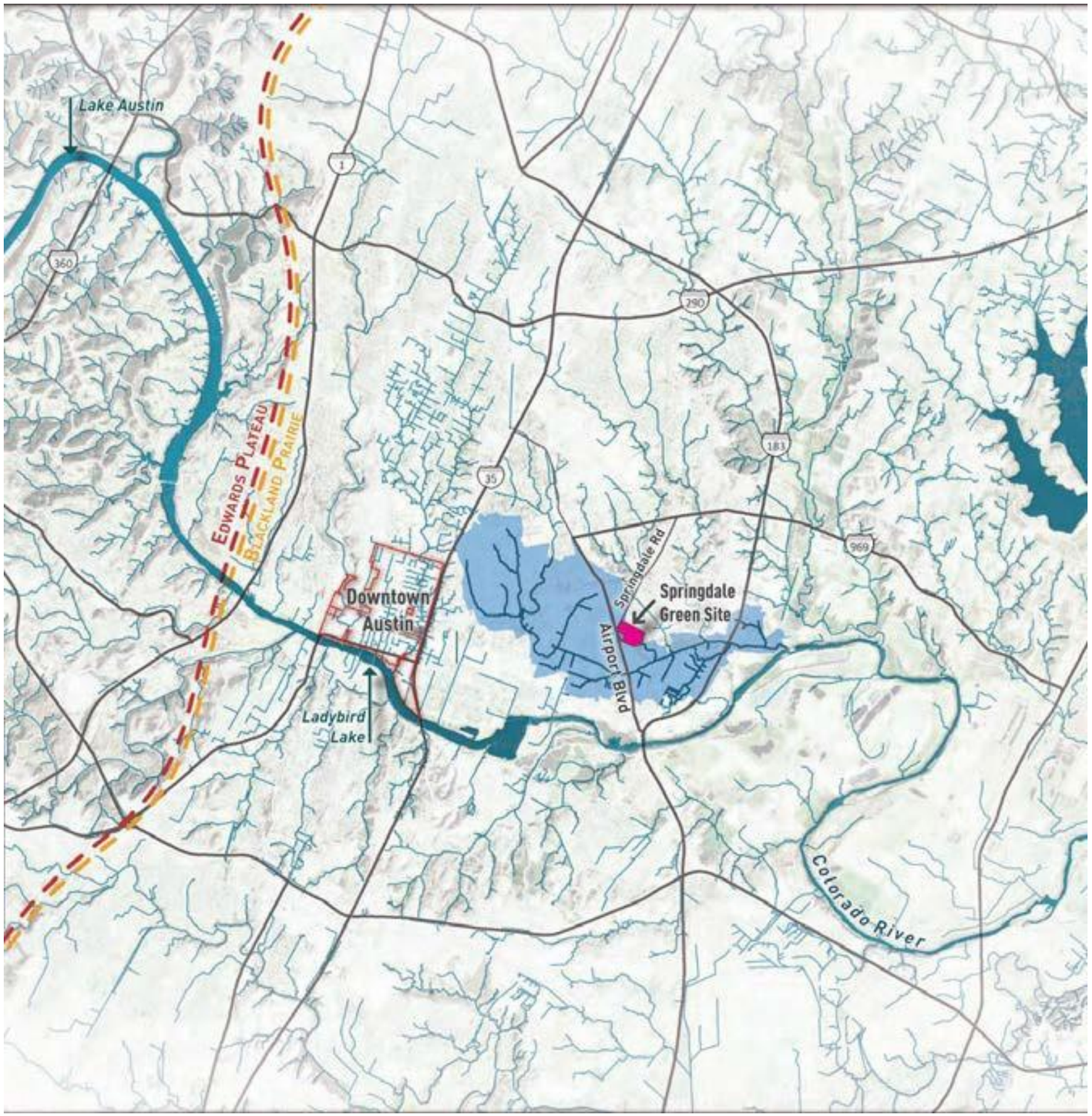
Project size: 30 acres

Project type: Commercial

Site context: Urban

Former land use: Remediated Brownfield

Terrestrial biome: Temperate grasslands, savannas, and shrub lands



Project Team

Client: Jay Paul Company
Landscape Architecture: dwg.
Architecture: Gensler
Electrical Engineering: EEA
Structural Engineering: IMEG Corp
Civil Engineering: Kimley-Horn
Irrigation: Masuen
Soil Science: Olsson Associates
Ecology: Siglo Group
Geotechnical Engineering: Terracon
Lighting Design: Tillotson
General Contractor: Level 10

CONTEXT

SITE CONSTRAINTS AND OPPORTUNITIES

- POST INDUSTRIAL REMEDIATED BROWNFIELD
- SIGNIFICANT PORTIONS OF THE SITE IN THE FLOODPLAIN
- CHANGING SITE USE AND IMPACTS TO NEIGHBORING COMMUNITIES
- LARGE PARTS OF THE SITE LONG UNUSED LEAD TO DEBRIS BUILDUP AND LARGE INVASIVE SPECIES COMMUNITIES BUT ALSO A SIGNIFICANT AMOUNT OF ESTABLISHED, MATURE VEGETATION

CONTEXT - HEALING THE PAST

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CONTAMINATION

- TANK FARM CLOSED FOLLOWING AIRPORT RELOCATION
- SITE REMEDIATED TO TCEQ STANDARDS
- TCEQ RESTRICTIONS PROHIBITING RESIDENTIAL, PARKLAND, AND FOOD PRODUCTION REMAIN IN PLACE

CONTEXT - HEALING THE PAST

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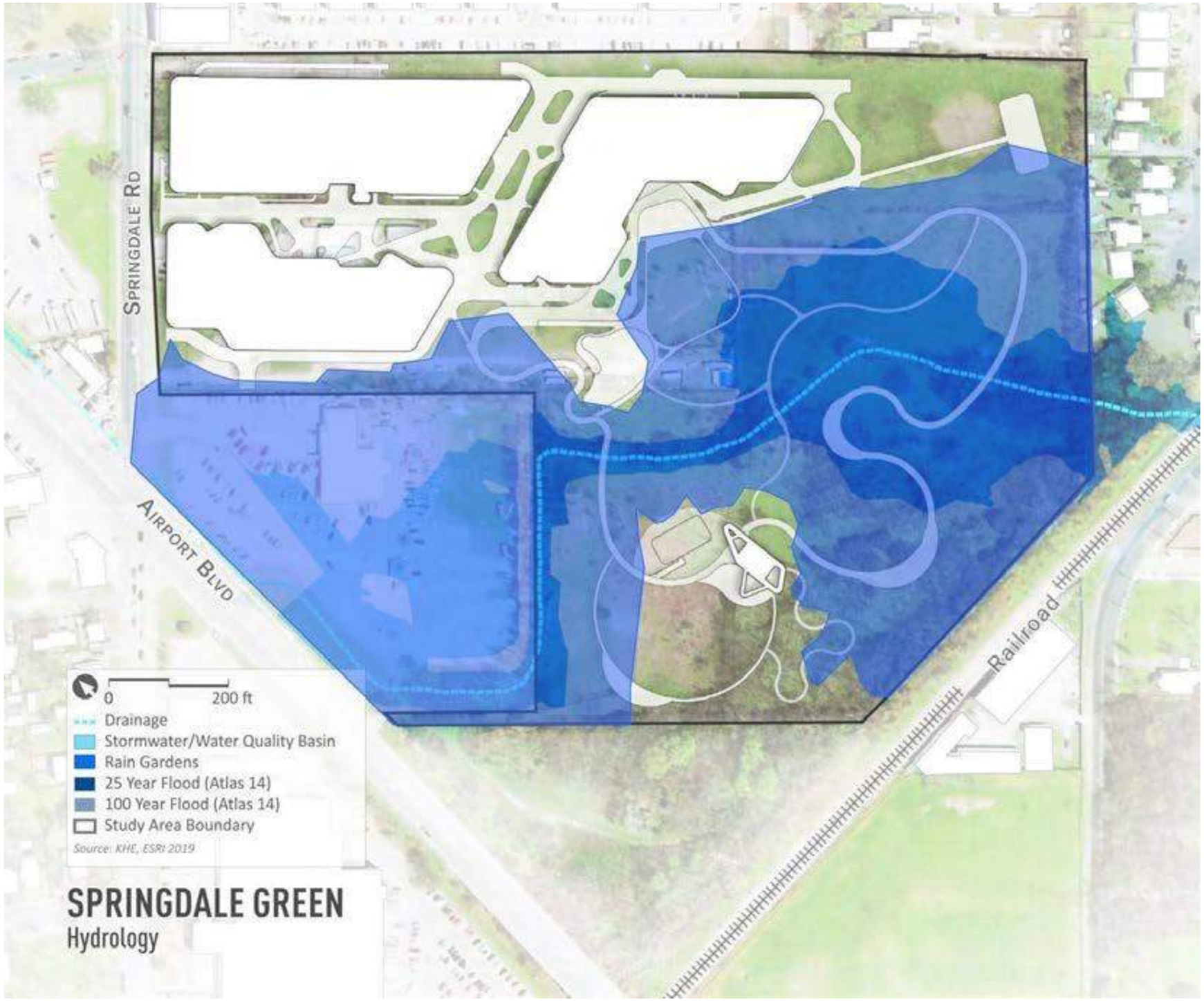
FLOODPLAIN

- 50%+ OF SITE WITHIN THE 100- YEAR FLOODPLAIN
- LOCAL ATLAS-14 EXPANSION OF FLOODPLAIN BOUNDARY
- DESIGN GOAL TO INCORPORATE FLOODPLAIN AREAS
- ADJACENT PROPERTY FLOODING ISSUES



CONTEXT - HEALING THE PAST

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SITE VEGETATION

- LARGE PORTIONS OF THE SITE HOST TO INVASIVE COLONIES
- DEBRIS AND TRASH BUILDUP ACROSS SITE
- FLOODPLAIN AND LOWER SITE HOME TO SIGNIFICANT, MATURE TREES AND NATIVE PLANT COMMUNITIES

CONTEXT - HEALING THE PAST

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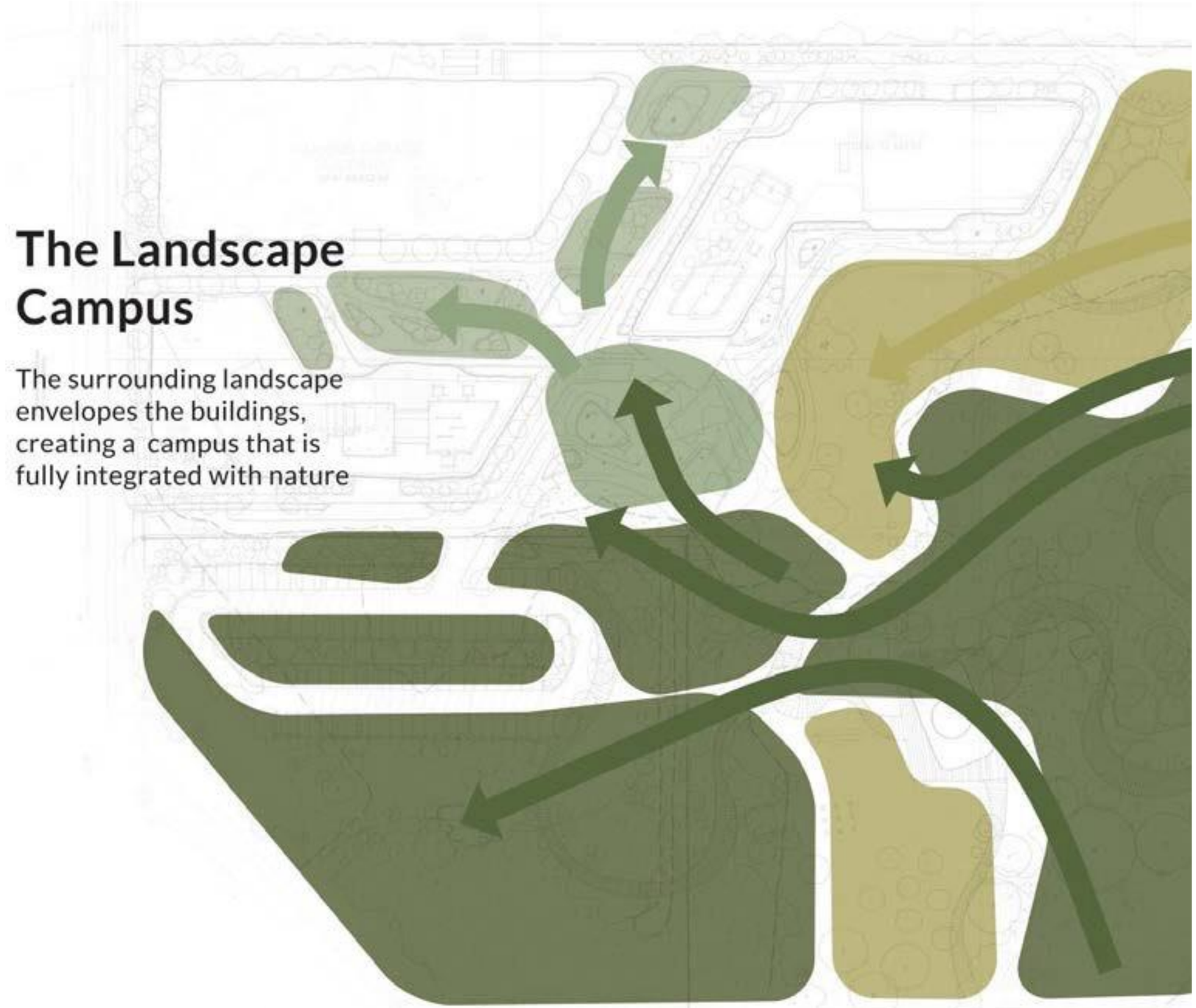
DESIGNING WITH ECOLOGY AND RESTORATION IN MIND

- CREATE A MEANS OF ACCESS TO THE FLOODPLAIN-ISOLATED PORTIONS OF THE SITE

- ENHANCE EXISTING SOILS AND EXPAND VEGETATION COMMUNITIES

- MANAGE THE INVASIVES ON SITE TO MAKE ROOM FOR RESTORATION OF THE EXISTING SITE VEGETATION

- INTEGRATE STORMWATER MANAGEMENT AND SUSTAINABLE WATER USE AS A CORE DESIGN PRINCIPLE



DESIGN FRAMEWORK

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THESIS

- FROM A POST-INDUSTRIAL SITE TO A LIVING FILTER.
- A PERFORMATIVE AND FUNCTIONAL GREEN EMERGES, CREATIVE CONTRASTS INSPIRE AND SOOTHE.
- A WILD LANDSCAPE BOTH INNOVATIVE AND WILD.
- SMART, FLEXIBLE AND SCALABLE. PRODUCTIVE AND MAGNETIC.
- ONCE A BROWNFIELD NOW A HEALING RESILIENT REFUGE.

DESIGN FRAMEWORK

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REMEDIATION

- EXTENSIVE SITE MAPPING BEFORE AND AFTER INVASIVES REMOVAL
- VEGETATION AND SOIL PROTECTION ZONES IDENTIFIED EARLY FOR SITE CLEARING
- SEVEN NATIVE VEGETATION COMMUNITIES IDENTIFIED ON SITE

DESIGN FRAMEWORK

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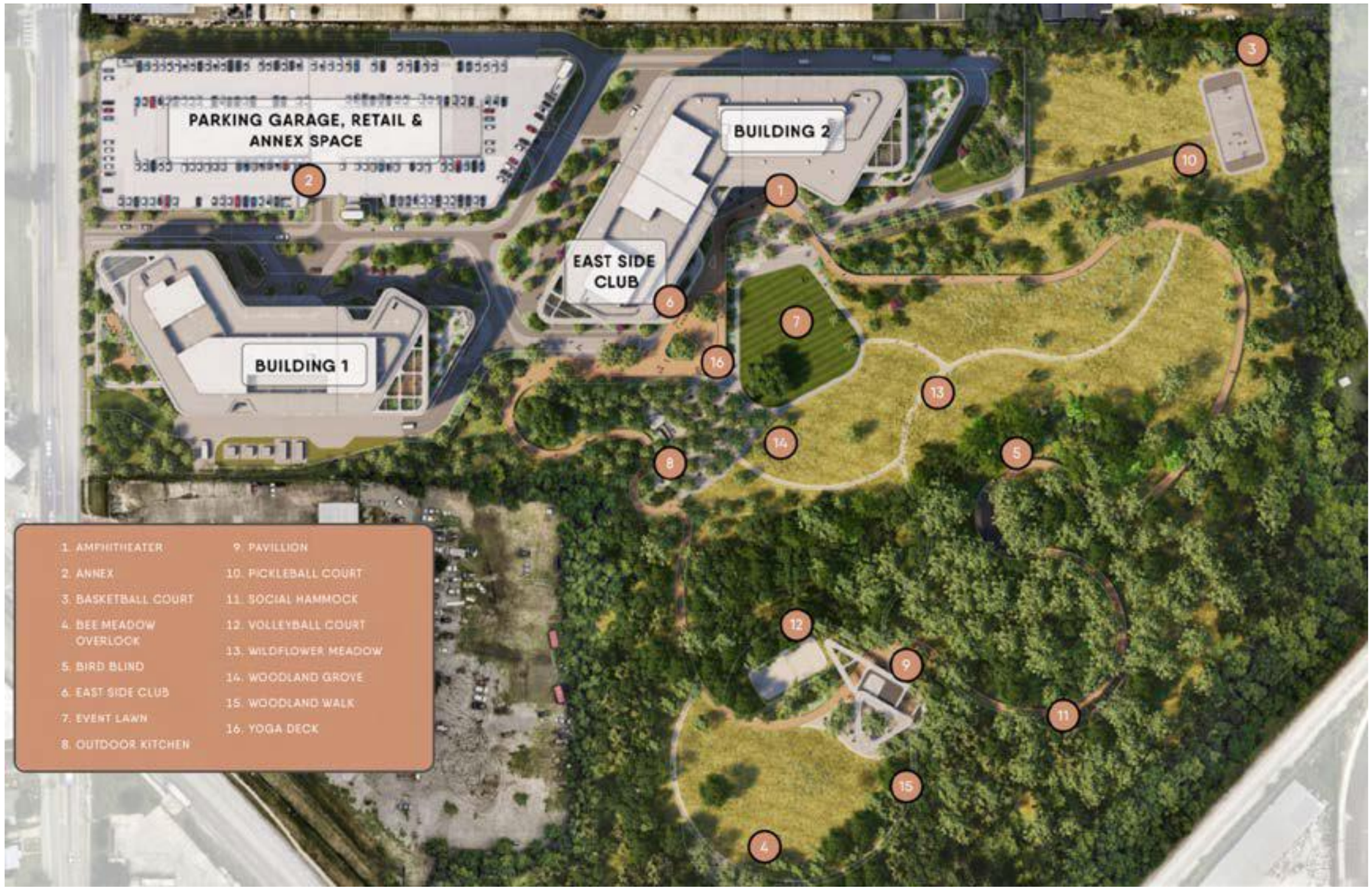
LAYOUT

- THREE BUILDINGS FORMING A CAMPUS CORE:
- 875,000SF OF CLASS A OFFICE
- 2,300 PARKING SPACES IN A SINGLE PRECAST GARAGE
- 20 ACRE RESTORATION EFFORT OF THE MAJORITY OF THE FLOODPLAIN
- ELEVATED BOARDWALK WEAVING TOGETHER THE CAMPUS CORE AND LOWER RESTORATION



DESIGN FRAMEWORK

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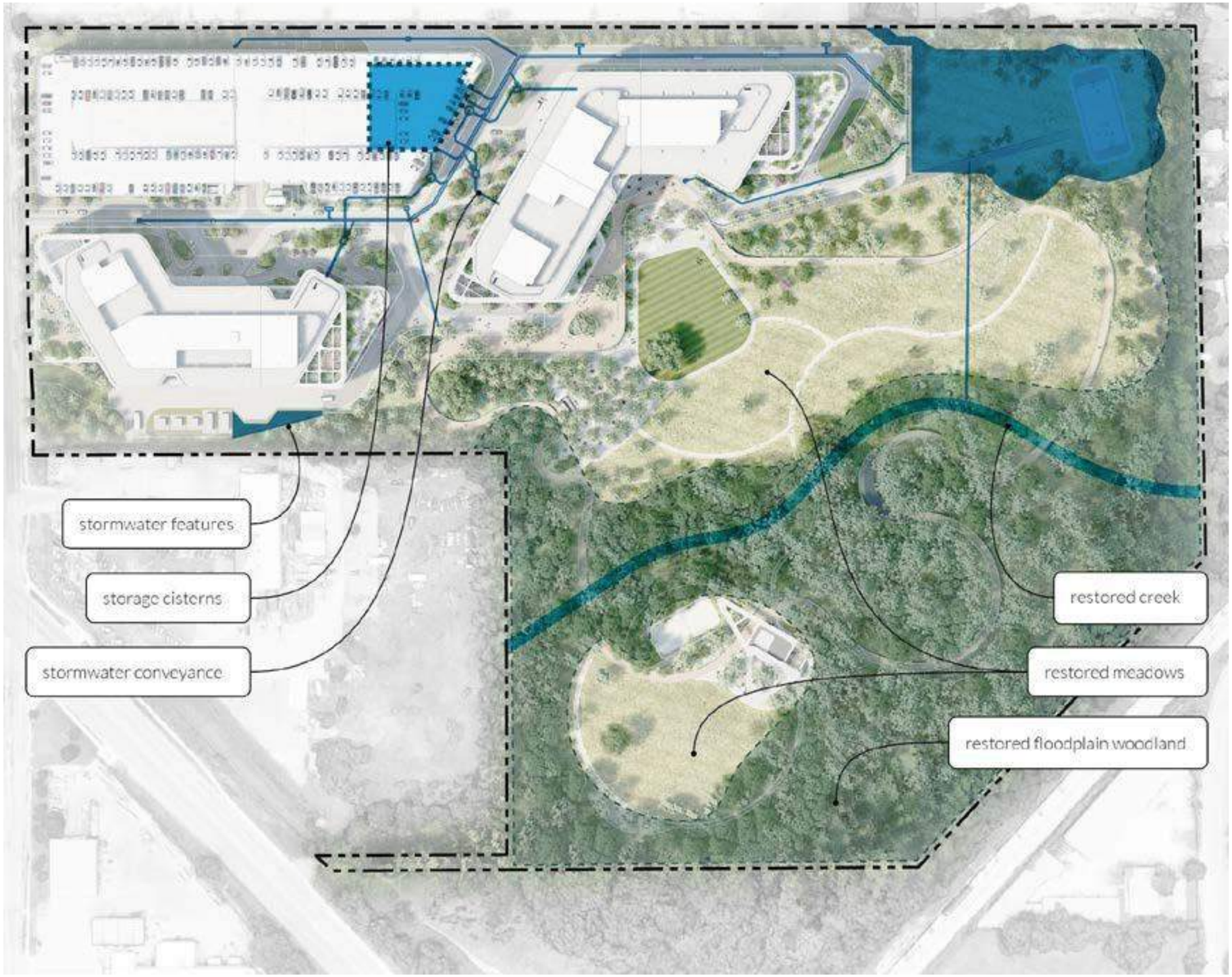
WATER

- FLOODPLAIN MADE ACCESSIBLE VIA BOARDWALK
- BOARDWALK PIERS STUDIED TO MITIGATE IMPACTS TO FLOODPLAIN STORAGE
- 650,000 GALLON CISTERN UNDER GARAGE COLLECTS RAINWATER FROM ROOFTOPS, TERRACES, AND CONDENSATE
- 100% OF POST ESTABLISHMENT SITE IRRIGATION FROM RECLAIMED WATER
- OVERSIZED STORMWATER DETENTION TO HANDLE INTERBASIN TRANSFER



SUSTAINABLE FEATURES

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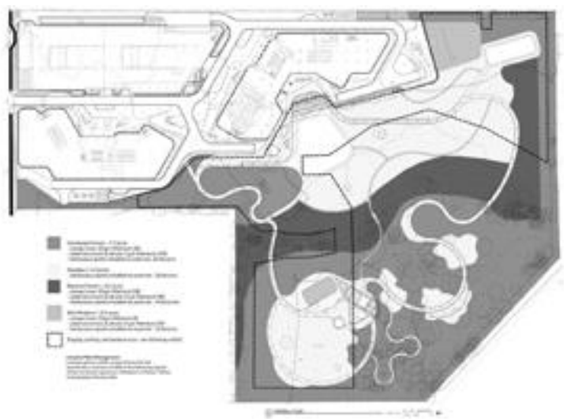
VEGETATION

- EXPANSION OF ALL SEVEN NATIVE PLANT COMMUNITIES ACROSS LOWER SITE
- RESTORATION TIED INTO PUD PROCESS
- INVASIVES MANAGEMENT, RESTORATION, SOIL DECOMPACTION AND AMENDMENT ALL INCORPORATED INTO CITY ACCEPTANCE



SUSTAINABLE FEATURES

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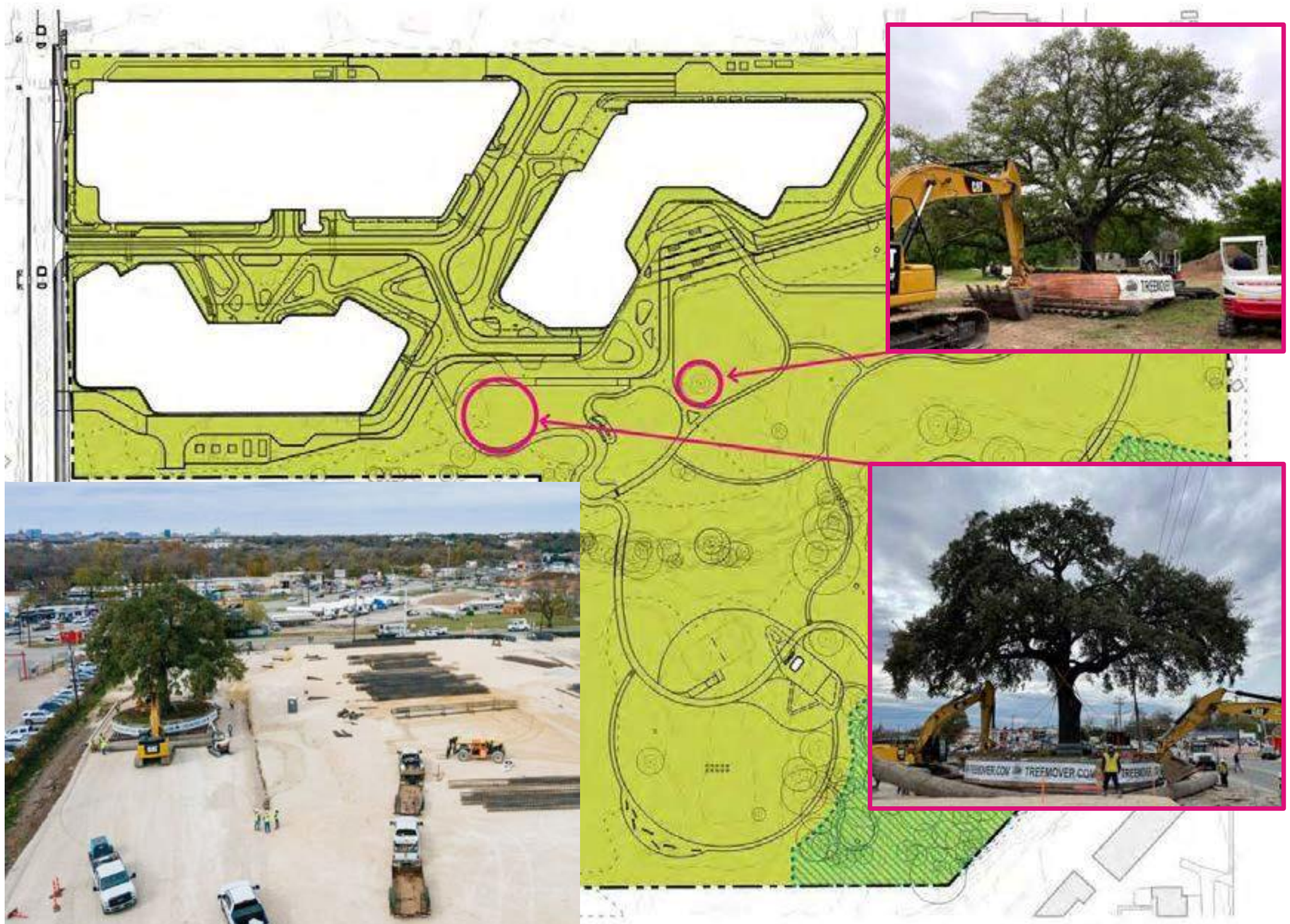
HERITAGE TREES

- ON-SITE LIVE OAK CORE IDENTIFIED FOR RELOCATION TO THE CAMPUS CORE

- HERITAGE OAK STATS;

26” diameter
45’ tall, 55’ spread
30’ diameter rootball
350,000lbs
1/8 mile move



- NEIGHBORING PROJECT NEGOTIATED THE MOVING OF A HERITAGE OAK TREE TO THE PROJECT

- HERITAGE OAK STATS;

47” diameter
70’ tall, 65’ spread
45’ diameter rootball
700,000lbs
1/4 mile move

SUSTAINABLE FEATURES

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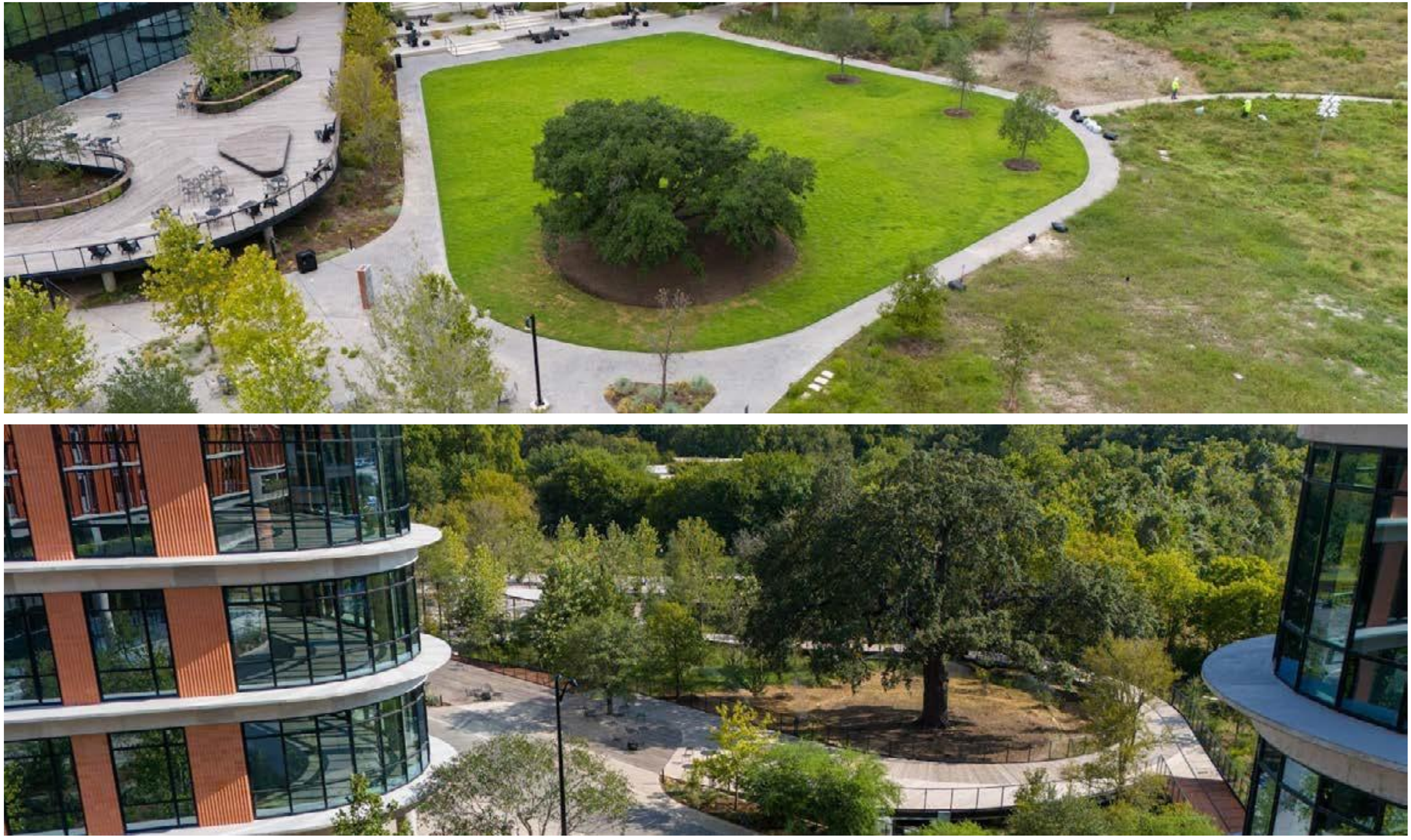

SUSTAINABLE FEATURES

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SOIL CELLS

- CAMPUS CORE AND RIGHT OF WAY HOST TO LARGEST SOIL CELL INSTALLATION IN THE CITY OF AUSTIN TO DATE

- 1,000 CUBIC FEET OF SOIL PER TREE

- URBAN CANOPY ESTABLISHMENT THROUGH OVERSIZED TREE SELECTION AND SOIL CELL INSTALLATION

SUSTAINABLE FEATURES

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SOILS

- ALL SITE SOILS CLASSIFIED BASED ON IMPACTION LEVEL FOR REMEDIATION OR REUSE

- STRINGENT CONTAMINATION MITIGATION MEASURES IN PLACE FOR SOILS AND MACHINERY

- ALL SOILS ON SITE OUTSIDE OF VSPZS RECEIVED DECOMPACTION AND AMENDMENTS

SUSTAINABLE FEATURES

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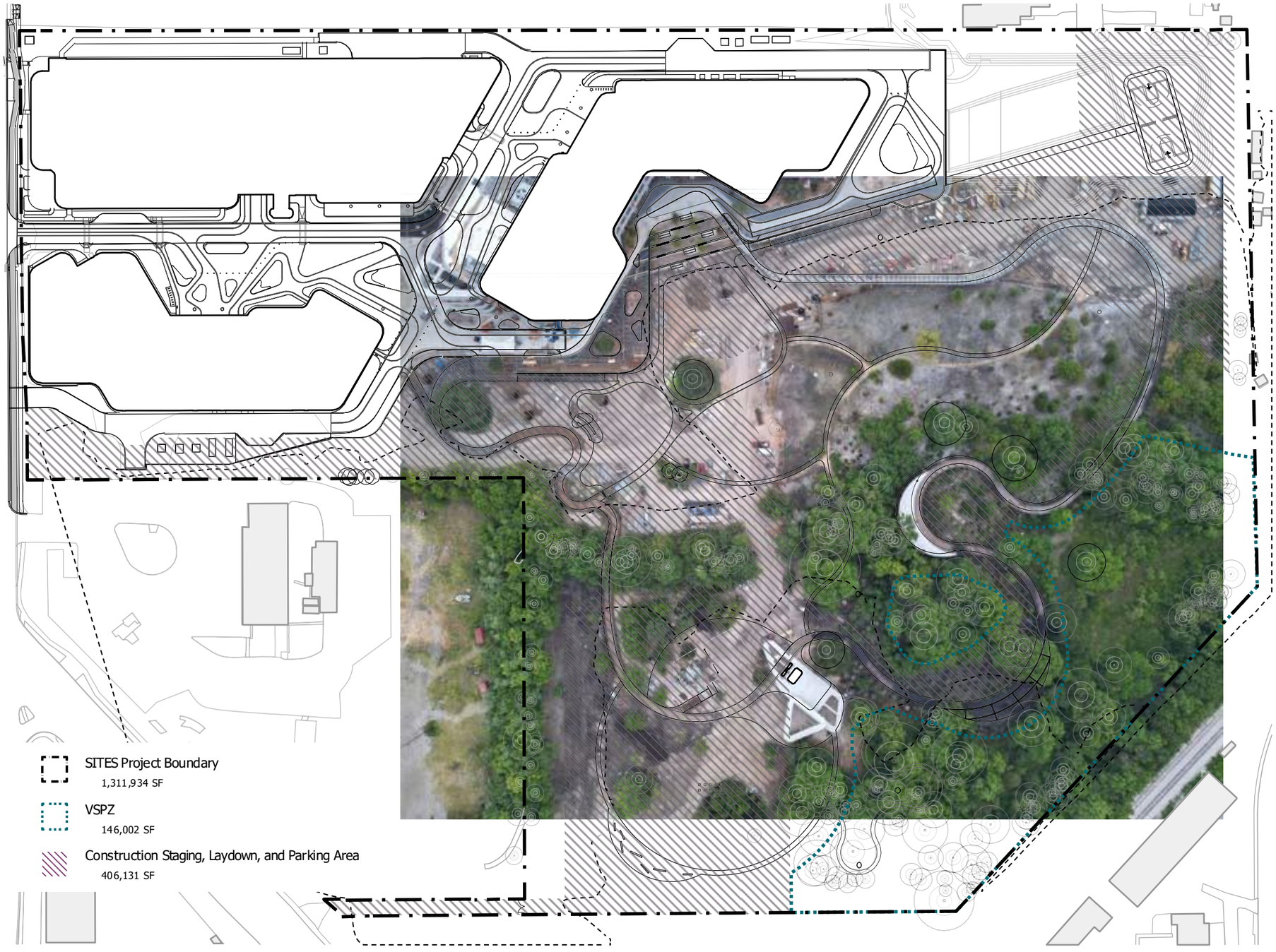
CONSTRUCTION PHASING

- 88% OF THE SITE EITHER NEWLY BUILT OR SCHEDULED FOR RESTORATION
- EXTENSIVE COORDINATION OF LAYDOWN AND STAGING ZONES TO LIMIT CORRIDORS OF DISTURBANCE
- VEGETATION PROTECTION PUT IN PLACE FOR AREAS BEYOND VSPZS TO FURTHER LIMIT IMPACTS TO EXISTING VEGETATION



SUSTAINABLE FEATURES

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BOARDWALK

- CENTRAL DESIGN MOVE ALLOWING ACCESS FROM THE CAMPUS TO THE LOWER RESTORATION ZONES

- STARTS AT YOGA DECK AND IS PUNCTUATED WITH HEALTH AND WELLNESS SPACES

- VARIES IN ELEVATION BETWEEN 18 INCHES AND 10 FEET ABOVE GROUND

SUSTAINABLE FEATURES

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HUMAN HEALTH & WELLBEING

- 1 KILOMETER LONG BOARDWALK TIES ALL SPACES TOGETHER
- PAVILION
- SOCIALHAMMOCK
- BIRD BLIND
- FOOTPATHS
- BEE MEADOW
- VOLLEYBALL COURT
- BASKETBALL COURT
- PICKLE BALL COURTS
- AMPHITHEATER SEATING
- GREAT LAWN
- YOGA DECK
- WOODLAND GROVE
- MEGA-BENCHES IN CAMPUS CORE

SUSTAINABLE FEATURES

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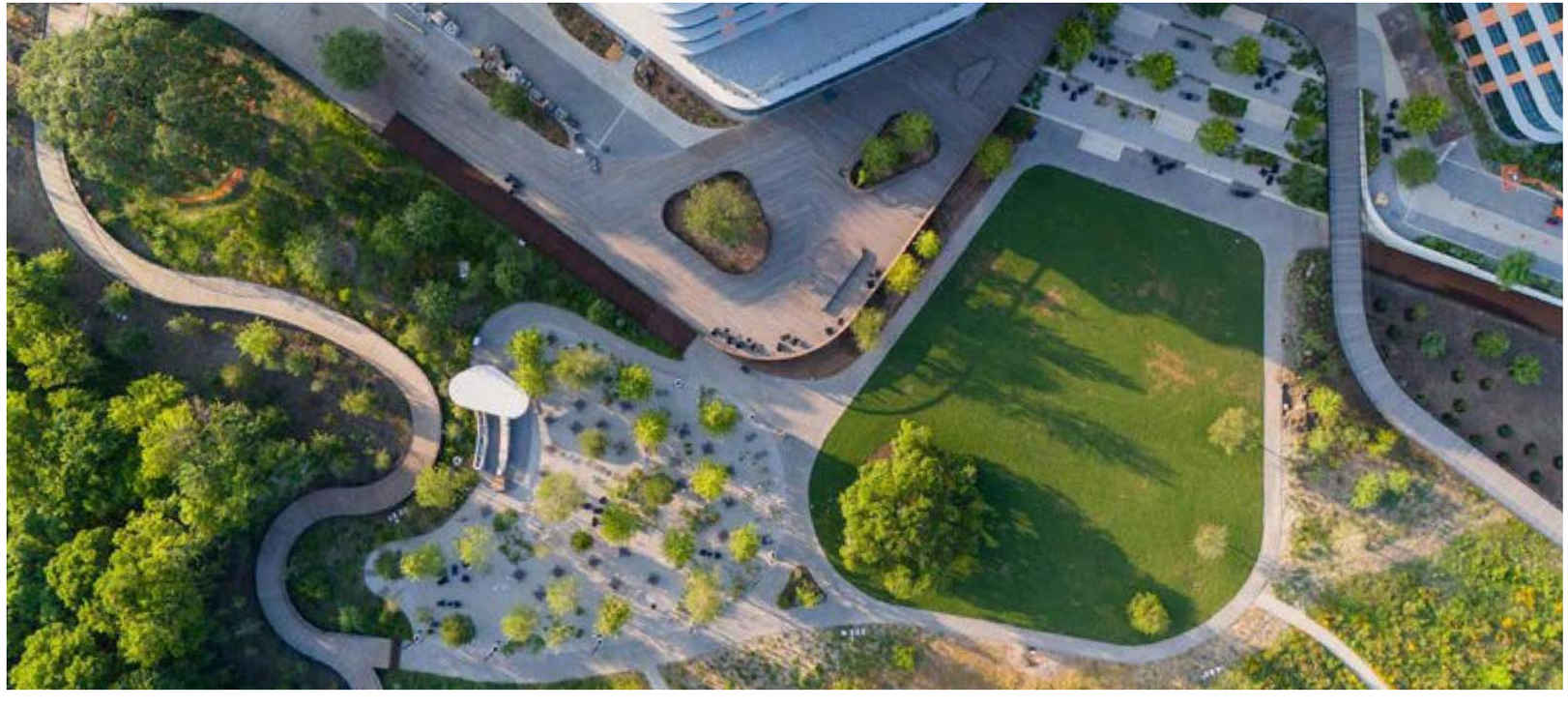

SUSTAINABLE FEATURES

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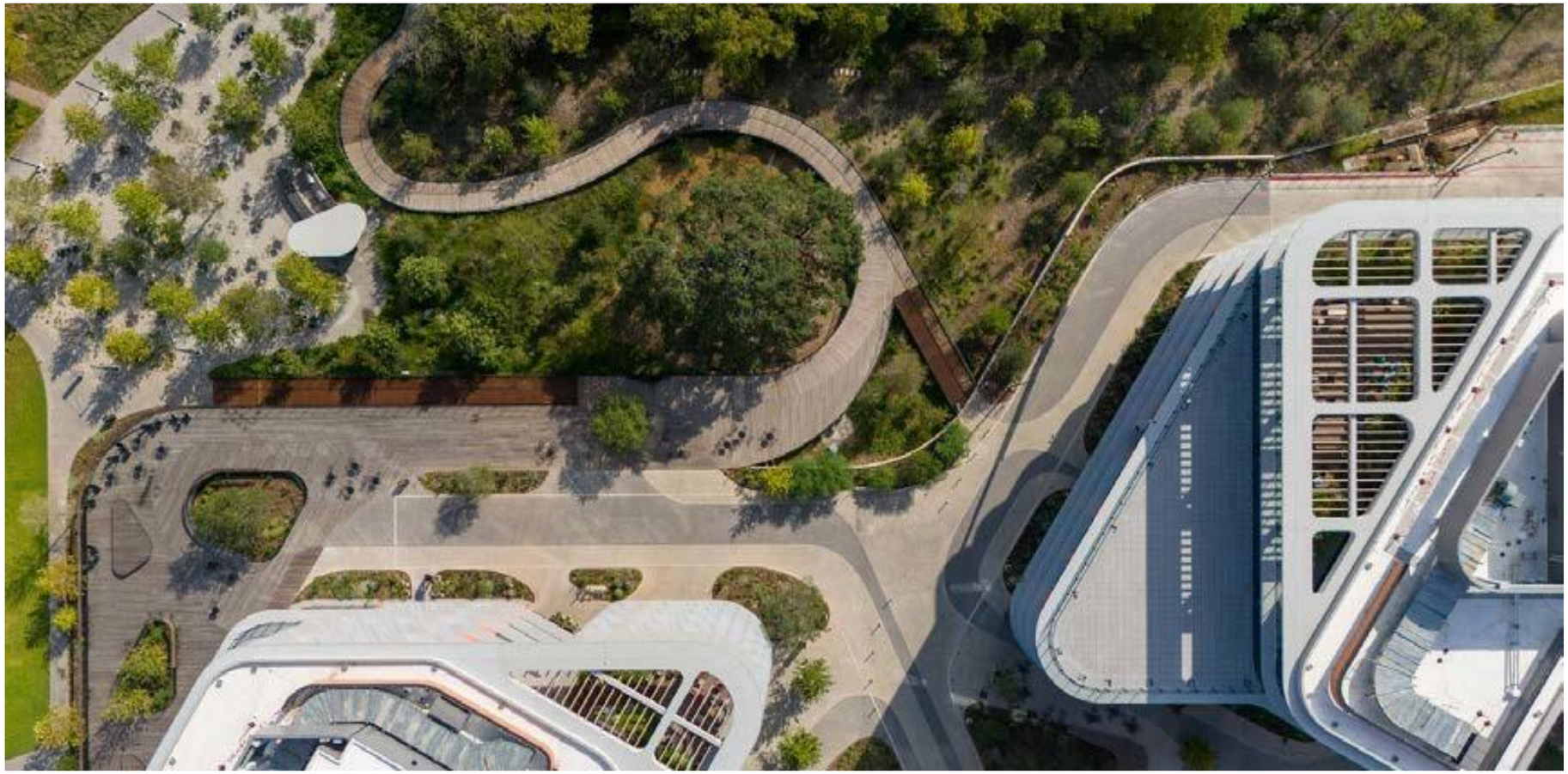

SUSTAINABLE FEATURES

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DESIGN CHALLENGES & LESSONS LEARNED

- GETTING A FULL PICTURE OF A SITE'S INVASIVE AND STAYING ON TOP OF INVASIVE SPECIES MANAGEMENT
- REGIONAL MATERIALS SOURCING IN THE WAKE OF A STATEWIDE WINTER STORM
- FINDING THE BALANCE NEEDED TO THREAD THE NEEDLE OF LAYDOWN AND STAGING TO ALLOW FOR BUILT FEATURES OVER UNDISTURBED LANDSCAPE
- UTILITY COORDINATION AND PUSHING TO ACHIEVE ENVIRONMENTAL SUPERIORITY TO THE STATUS QUO

LESSONS LEARNED

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INVASIVES MANAGEMENT

- FIRST AND LAST PARTS OF THE PROJECT
- EXTENSIVE EARLY VISITS TO DETERMINE PRESENCE AND APPROACH
- VSPZ PROTECTION NEEDED TO BE CHECKED FOR INVASIVE RECURRENCE
- FINAL PLANTING COORDINATION BETWEEN CONSTRUCTION PEEL-BACK, PLANT PROCUREMENT, AND INVASIVES TREATMENTS

LESSONS LEARNED

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PROCUREMENT

- 60% REGIONAL MATERIALS GOAL

- 20% OF LANDSCAPE BUDGET COMPOSED OF PLANT MATERIAL;

1. 4,000 TREES
2. 75,000 SHRUBS
3. 15 ACRES OF NATIVE SEED

- SEVERE WINTER STORM IMPACTED STATEWIDE NURSERY TRADE

- CONTRACT GROWING, ALREADY ENGAGED, BECAME CRITICAL TO PROJECT SUCCESS

LESSONS LEARNED

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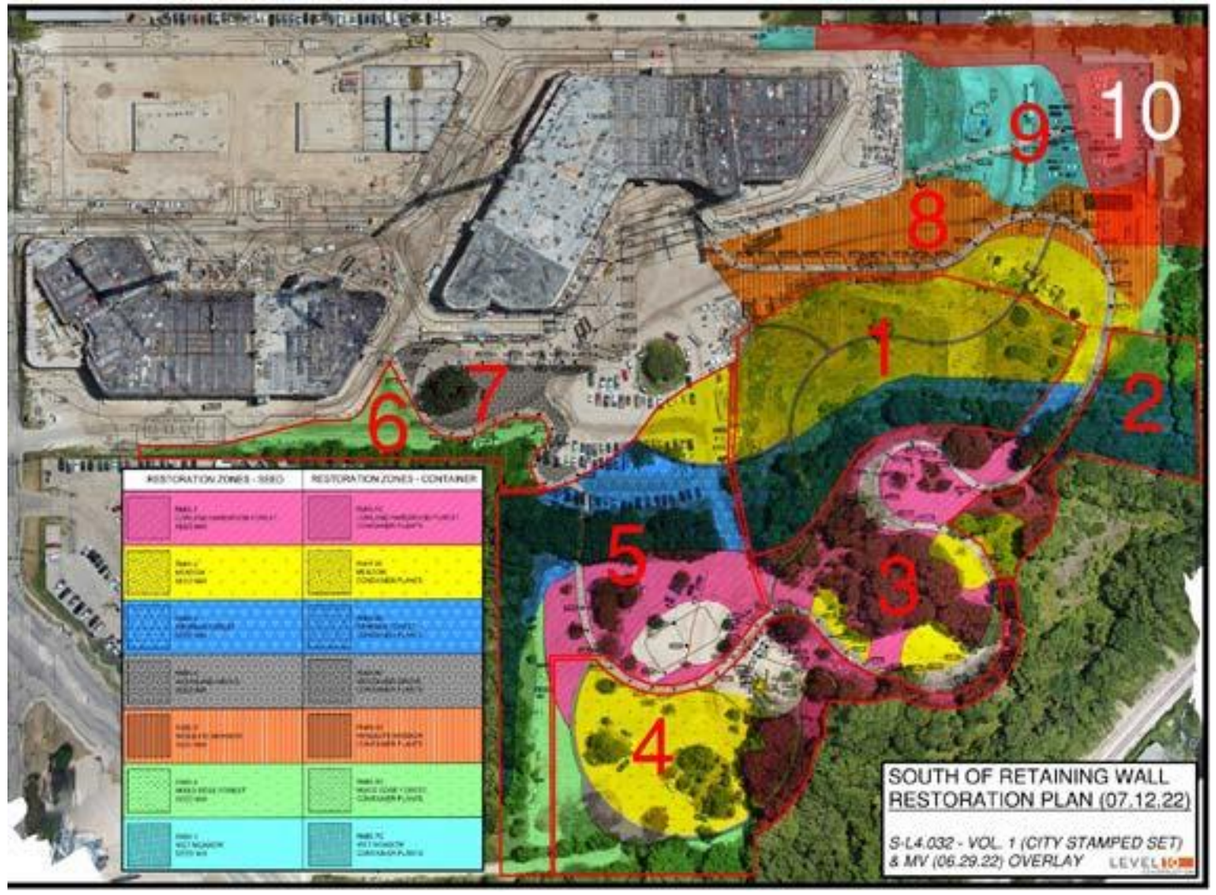
VEGETATION

- CLIENT COMMUNICATION KEY TO SEQUENCE STAGING SUCCESS
- CONSTRUCTION PEEL- BACK REQUIRED TO LIMIT
- DISTURBANCE OF RESTORED AREAS
- PHASING STRUCTURED AROUND BOARDWALK INFRASTRUCTURE REQUIREMENTS



LESSONS LEARNED

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ENVIRONMENTAL SUPERIORITY

- MOST TREES INSTALLED SURPASS ORDINANCE SIZE MINIMUMS
- CRANE STAGING LOGISTICS REQUIRED FOR OVERSIZED PLANT MATERIAL
- UTILITY COORDINATION DUE TO UNPRECEDENTED SOIL CELL USE
- RELOCATION OF UTILITY LINES AND ROOT BARRIER PUT IN PLACE OUTSIDE OF ROOT ZONES

LESSONS LEARNED

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AFTER COMPLETION

- CISTERN STORAGE AND CAPACITY TO BE MONITORED FOR USE OF ALL POST-ESTABLISHMENT IRRIGATION NEEDS OF THE PROJECT

- STORMWATER BASIN TO BE MONITORED TO ENSURE SUCCESSFUL MANAGEMENT OF ON-SITE RAINFALL AND NEIGHBORING WATERSHED MANAGEMENT

- MANDATED MONITORING OF RESTORATION ZONES TO ENSURE SUCCESSFUL TRANSITION INTO HEALTHY ECOSYSTEMS

- TIERED APPROACH DEVELOPED TO MEET MAINTENANCE NEEDS OF LANDSCAPE TYPES

- DETAILED RECORD KEEPING BY MAINTENANCE CONTRACTORS STIPULATED FOR CAMPUS CONTRACTS

- ONGOING MONITORING OF THE TWO TRANSPLANTED HERITAGE TREES WILL CONTINUE TO ENSURE A HEALTHY AND SUCCESSFUL RELOCATION

MAINTENANCE & MONITORING

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BEFORE

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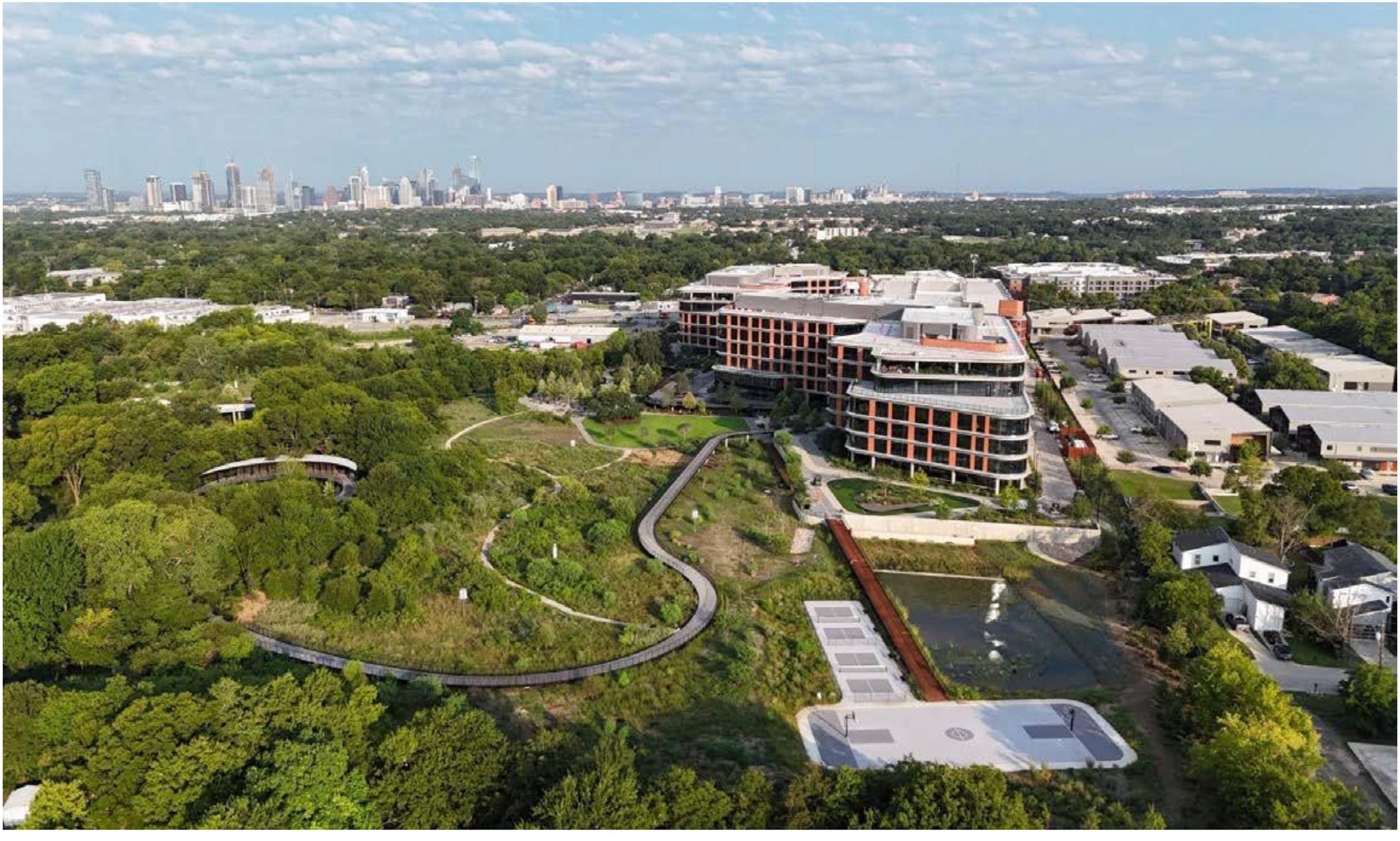

AFTER

thank you

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