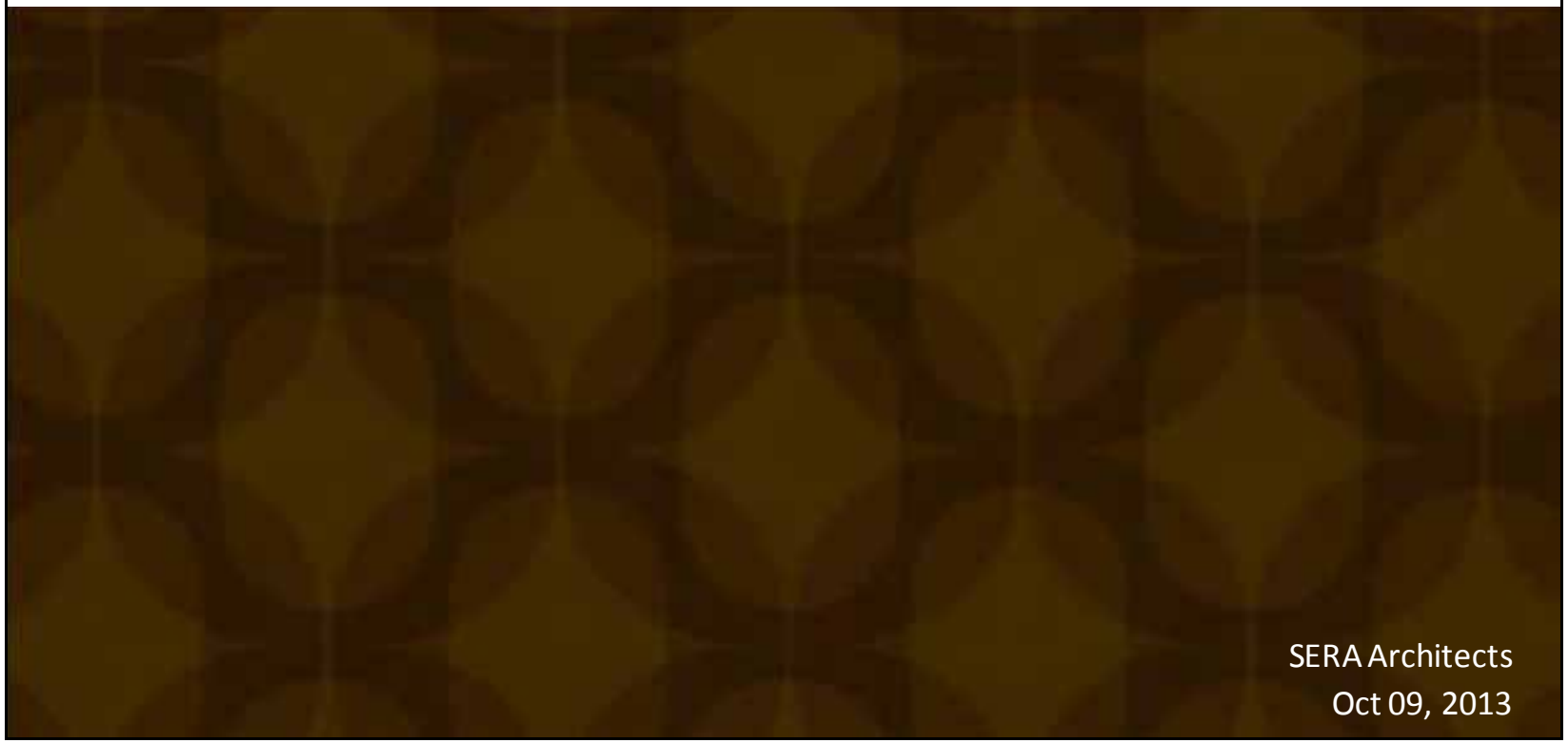
University of Oregon

Erb Memorial Union Expansion & Renovation

User Group Meeting



SERA Architects

Oct 09, 2013

PROJECT OVERVIEW

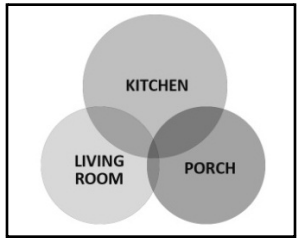
EMU INTERIOR

EMU PROJECT PATTERNS

How much distraction is good?

Provide a range of distractions.

Layers of Quiet and Buzz



Collaborative work can happen in various environments.

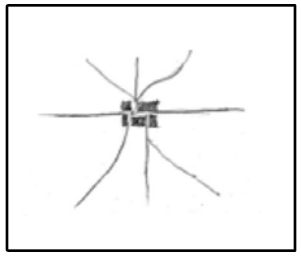
Provide three broad types of informal gathering spaces.

Working Together

Direct sun and daylight attract people.

Use daylight functionally to replace electric lighting and architecturally to attract a variety of people and uses.

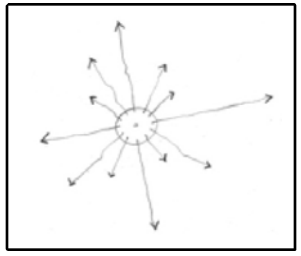
Light Attracts Use



A large building can be a barrier to passage and lose potential for energy.

Ensure the ability to arrive from many directions and connect indoors with the outdoors.

Destinations
Pass Through not Around



The EMU is in the center of campus but isn't always the campus center.

Create a university center, a connecting, welcoming hub that reaches out to campus and community.

Hub of Campus

The kitchen is always the room in the family home where people naturally gravitate to.

Create a kitchen/great room, the heart within the Heart, hub within the Hub.

Kitchen – Great Room

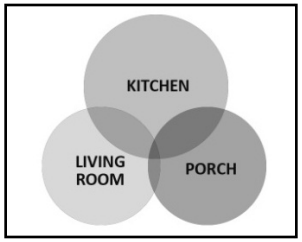
PROJECT GOALS AND PATTERNS

EMU INTERIOR

USER GROUP DESIGN SESSION

- LOUNGE SPACES
- STUDY SPACES
- COLLABORATIVE SPACES
- EVENT BREAKOUT
- FOOD SERVICE
- QUIET AND ACTIVE SPACES
- ACCESS TO TECHNOLOGY

Layers of Quiet and Buzz

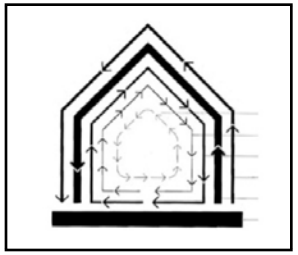


Working Together

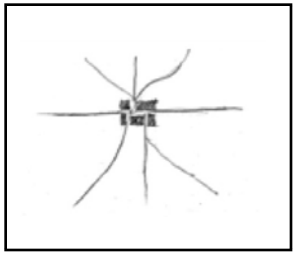
EMU INTERIOR

SPACE NEEDS

- FLEXIBLE SPACES
- VARIETY OF SPACES
- LET ARCHITECTURE DRIVE SPACE USE
- SPACES TO SUPPORT EVENTS
- IMPROMPTU CONNECTIONS
- UNLIMITED ACCESS TO TECHNOLOGY
- LET STUDENTS DETERMINE HOW LONG TO USE SPACE



Flexibility and Longevity



Destinations
Pass Through not Around

EMU INTERIOR

WHAT DOES THE EMU FEEL LIKE?

- WARM
- WOODY
- SOFT
- NATURAL MATERIALS
- NATURAL LIGHT

Light Attracts Use

South Facing Outdoors

SUSTAINABILITY PLAN UPDATE

PURPOSE:

Discuss updates to the project specific sustainability plan

METRICS

ENERGY / HEALTH
RELATED SUSTAINABLE DESIGN GOALS

- Performance metric around energy use
  - Oregon Model min. (35% better than OR code)
  - 45% better than OR Code (Analyze Specific Measures)
  - Additional 10 to 15% from occupant engagement
- Provide daylighting for most student offices and views for 75% of regularly occupied spaces
- Solar Thermal (Analyze Specific Measures)
- PV Ready (investigate third party funding of demonstration PV array

MATERIALS
SUSTAINABLE DESIGN GOALS **REVISITED**

- Reuse ~~most of~~ materials from the demolished building in the new student union
- Recycle ~~90-95%~~ 75-80% of construction debris
- Prioritize sourcing products locally
- Minimize use of toxic products
- Local, Salvaged, wood
- Filter all materials decisions through a lens of Cost & Student Health
- Prioritize Identity & Inspiration
- Prioritize Durability

EQUITY(+)
SUSTAINABLE DESIGN GOALS

- Maintain access for daylighting for surrounding buildings
- Create a universally accessible design
- Incorporate and embrace diversity

WATER
SUSTAINABLE DESIGN GOALS

- Meet Oregon Model for Stormwater mgmt (Treating Stormwater on University)
- ~~35~~-40% reduction in water use from fixtures and fittings (with .125 urinals)
- 50-60% reduction in water use

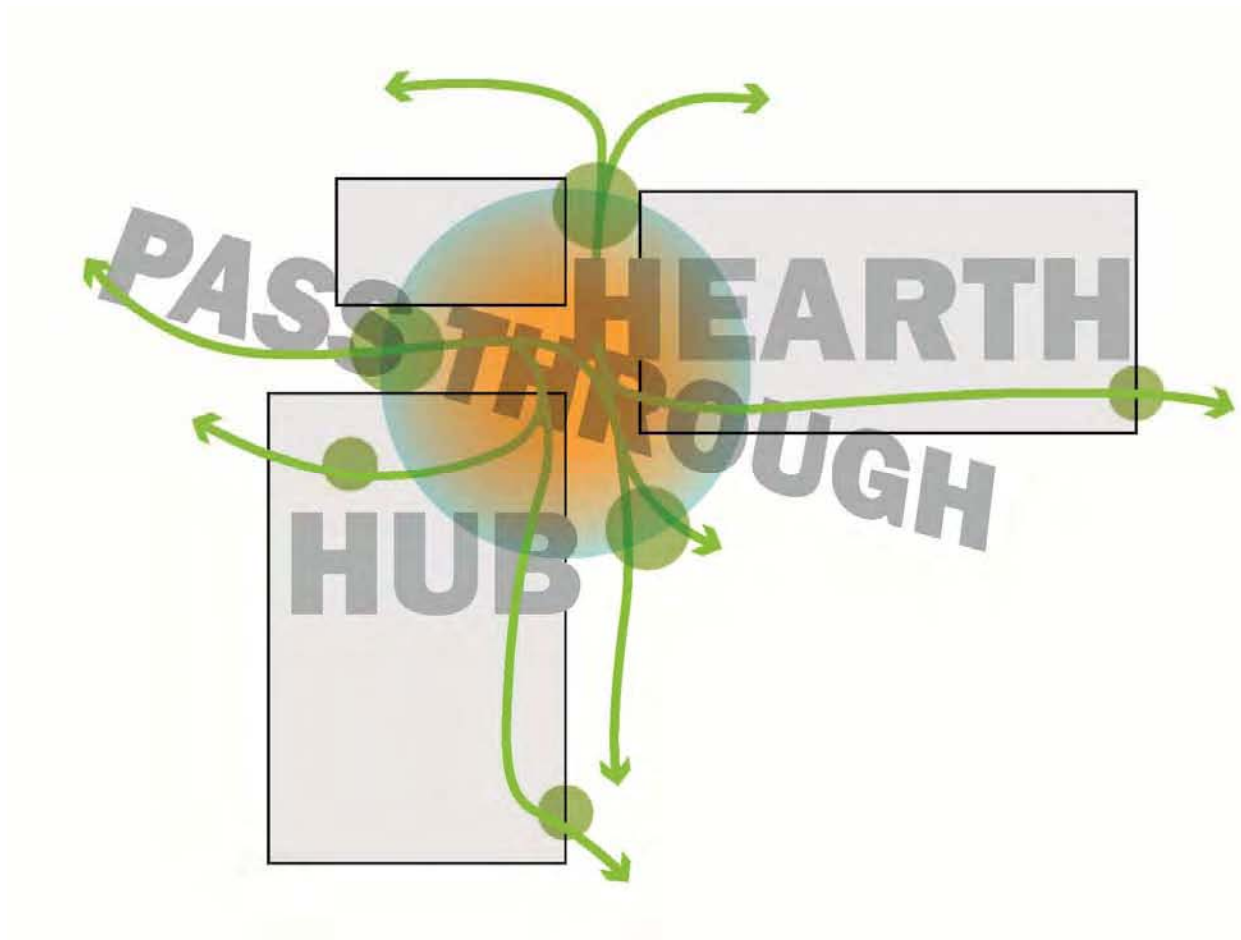
CAMPUS SCALE SYSTEMS(+)
SITE RELATED SUSTAINABILITY GOALS

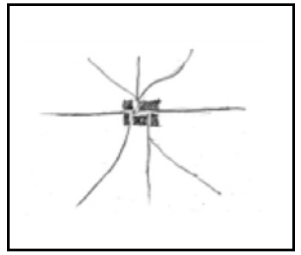
- Support non-automobile transportation
- Repair / reinforce campus connections
- District ready for future incorporation into a larger network
- Provide locations for edible landscape

DESIGN PROCESS (+)
SUSTAINABLE DESIGN GOALS

- A Student Union that inspires its occupants to live their lives in a more sustainable way

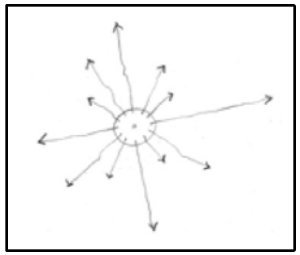
EMU INTERIOR CONCEPTS



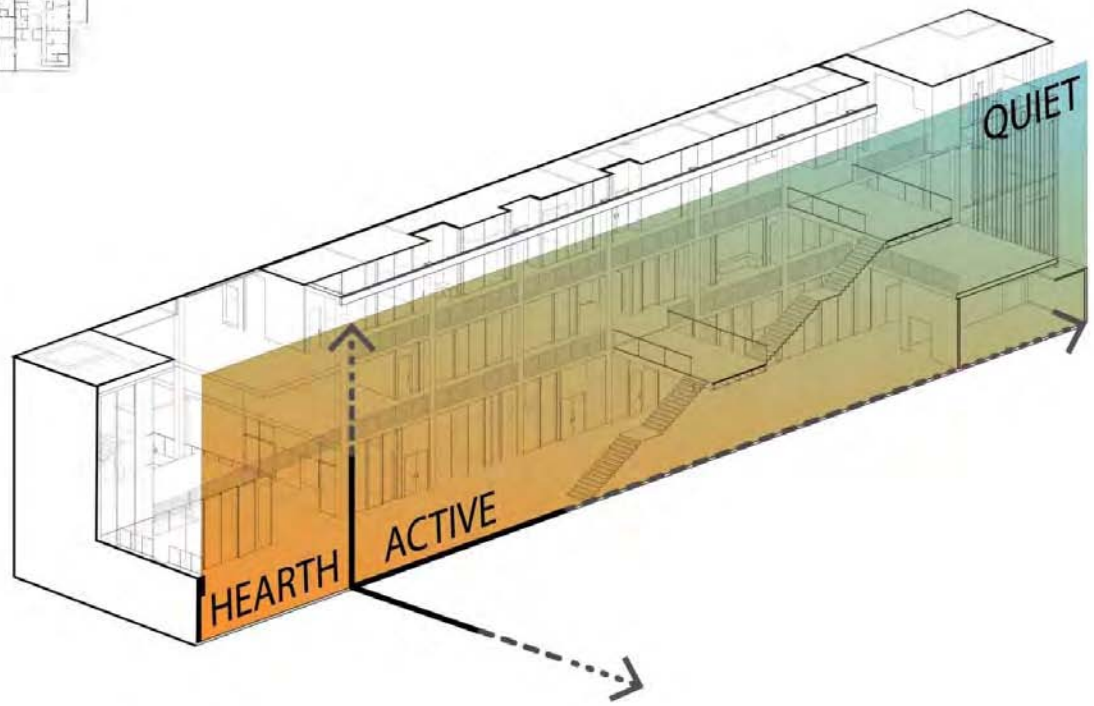


Destinations
Pass Through not Around

Kitchen – Great Room



Hub of Campus



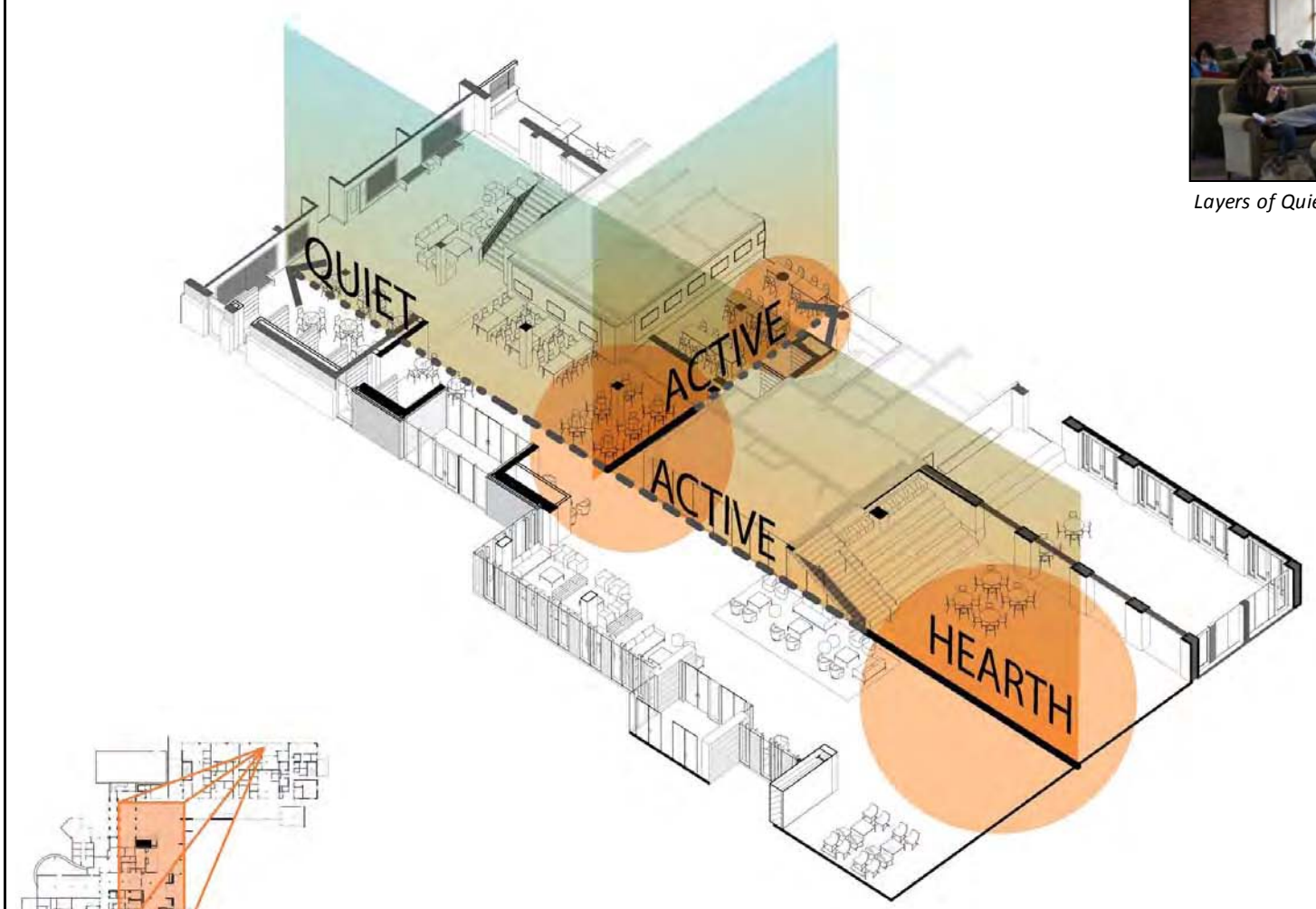
Layers of Quiet and Buzz

8am-5pm
24/7

Security Layers

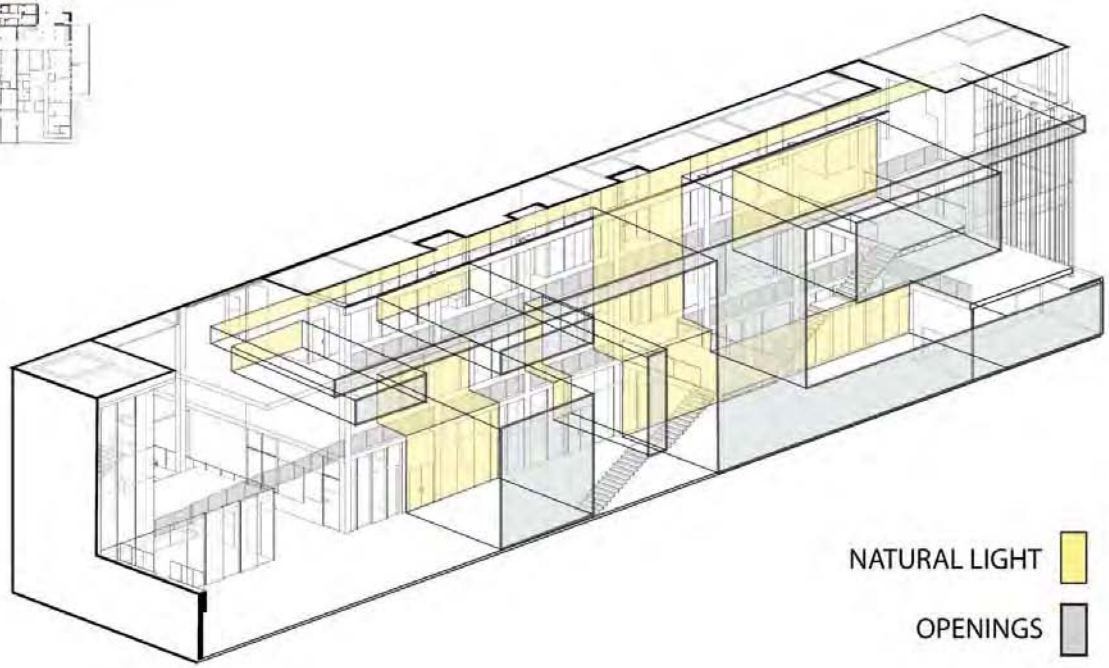
LAYERS OF QUIET AND BUZZ

Layers of Quiet and Buzz



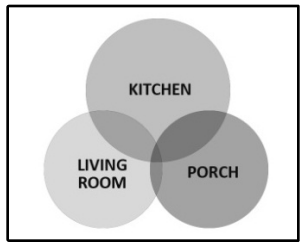
LAYERS OF QUIET AND BUZZ

Light Attracts Use

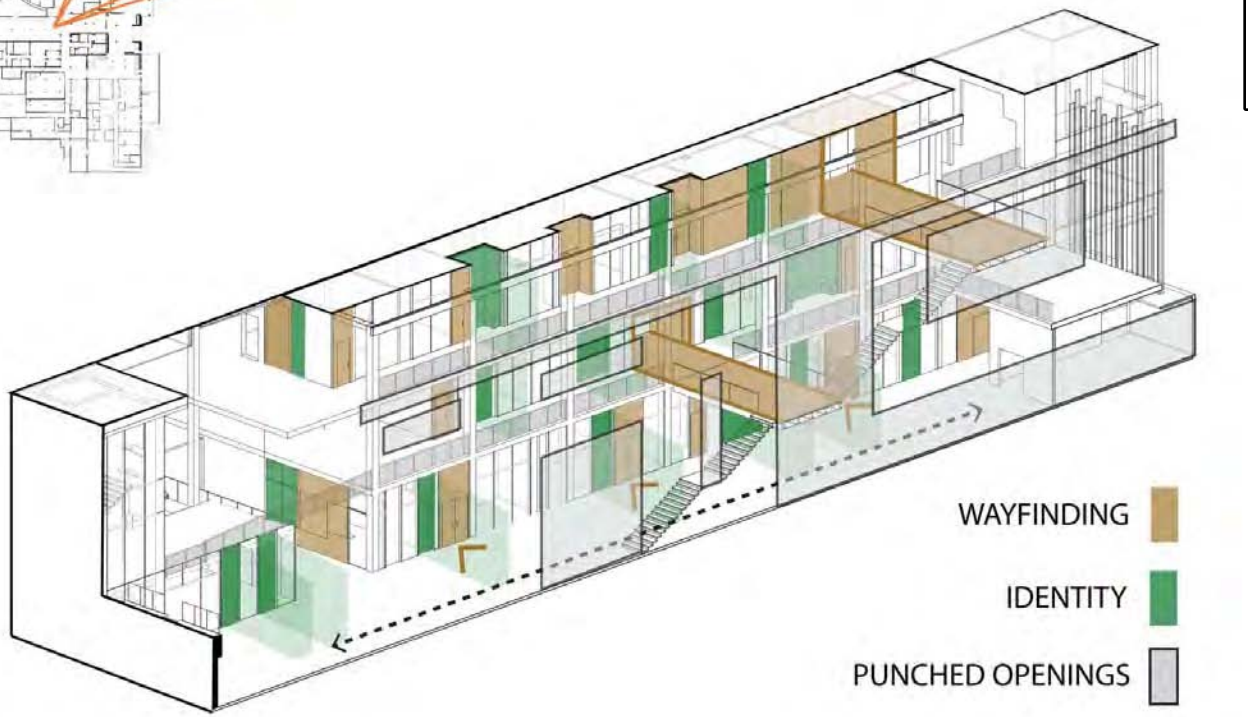


"Linked together by a central anchor point or circulation spine, the main element aids in internal wayfinding and provides visibility/exposure to the multitude of programs within the EMU."

STUDENT PROGRAMS – ACCESS TO LIGHT

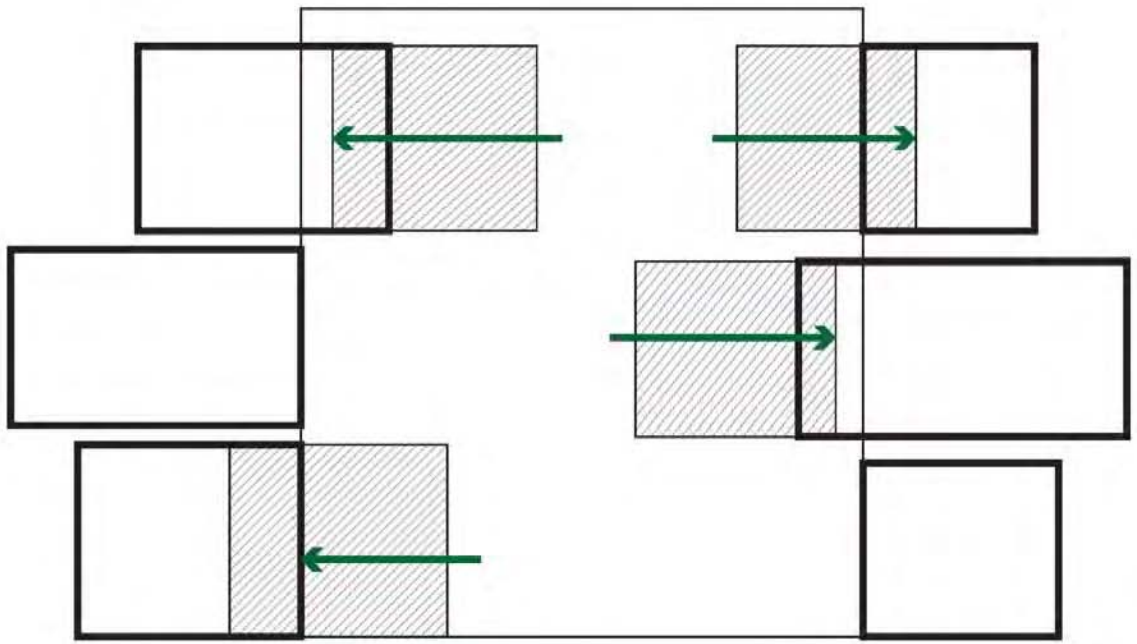


Working Together

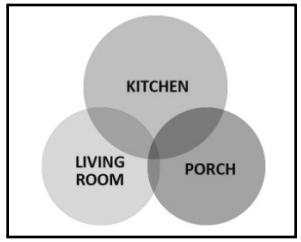


Materials along the student boulevard wall aid in wayfinding and provide opportunities for student groups to connect and participate.

STUDENT STREET DIAGRAM



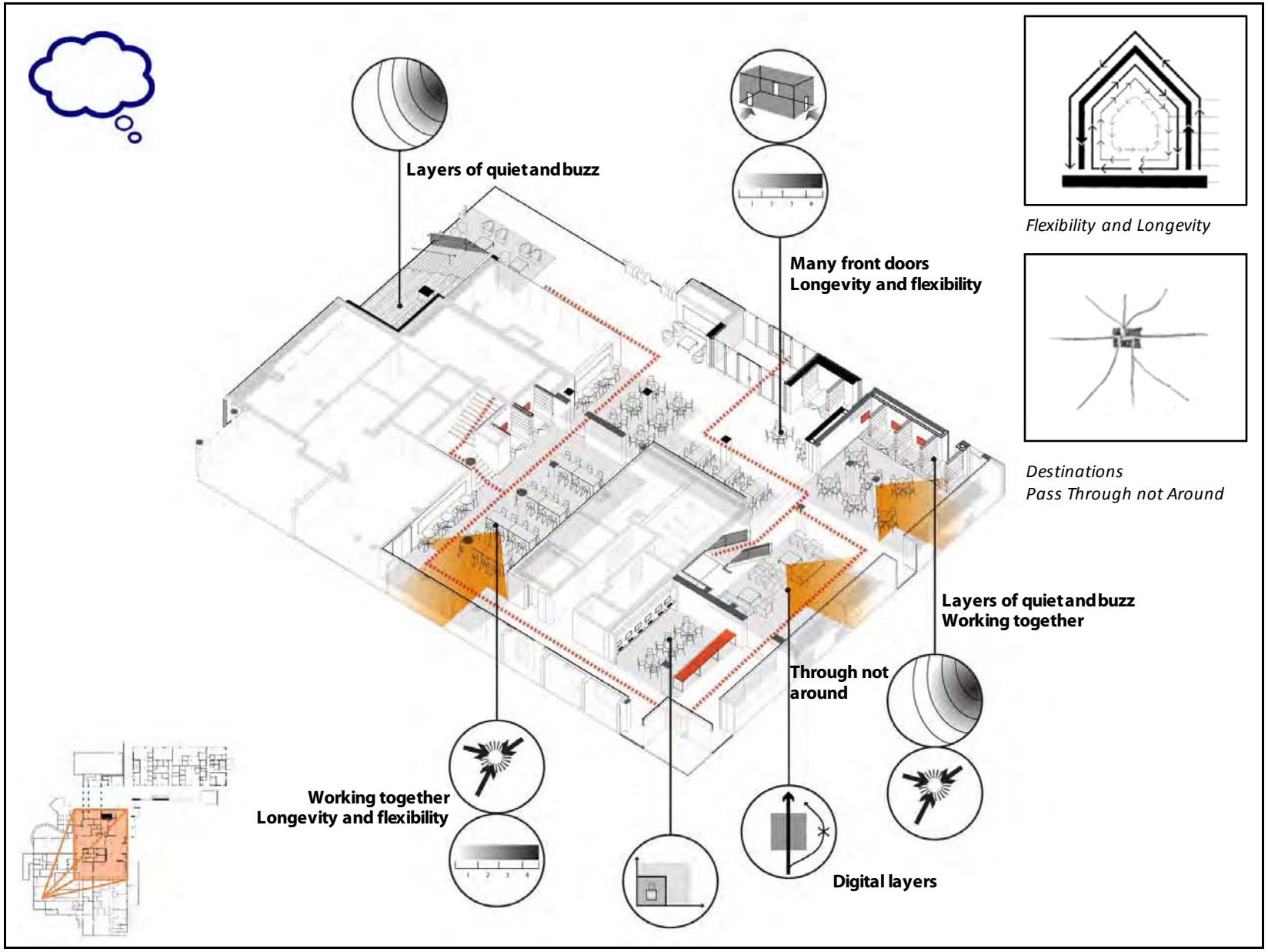
Layers of Quiet and Buzz



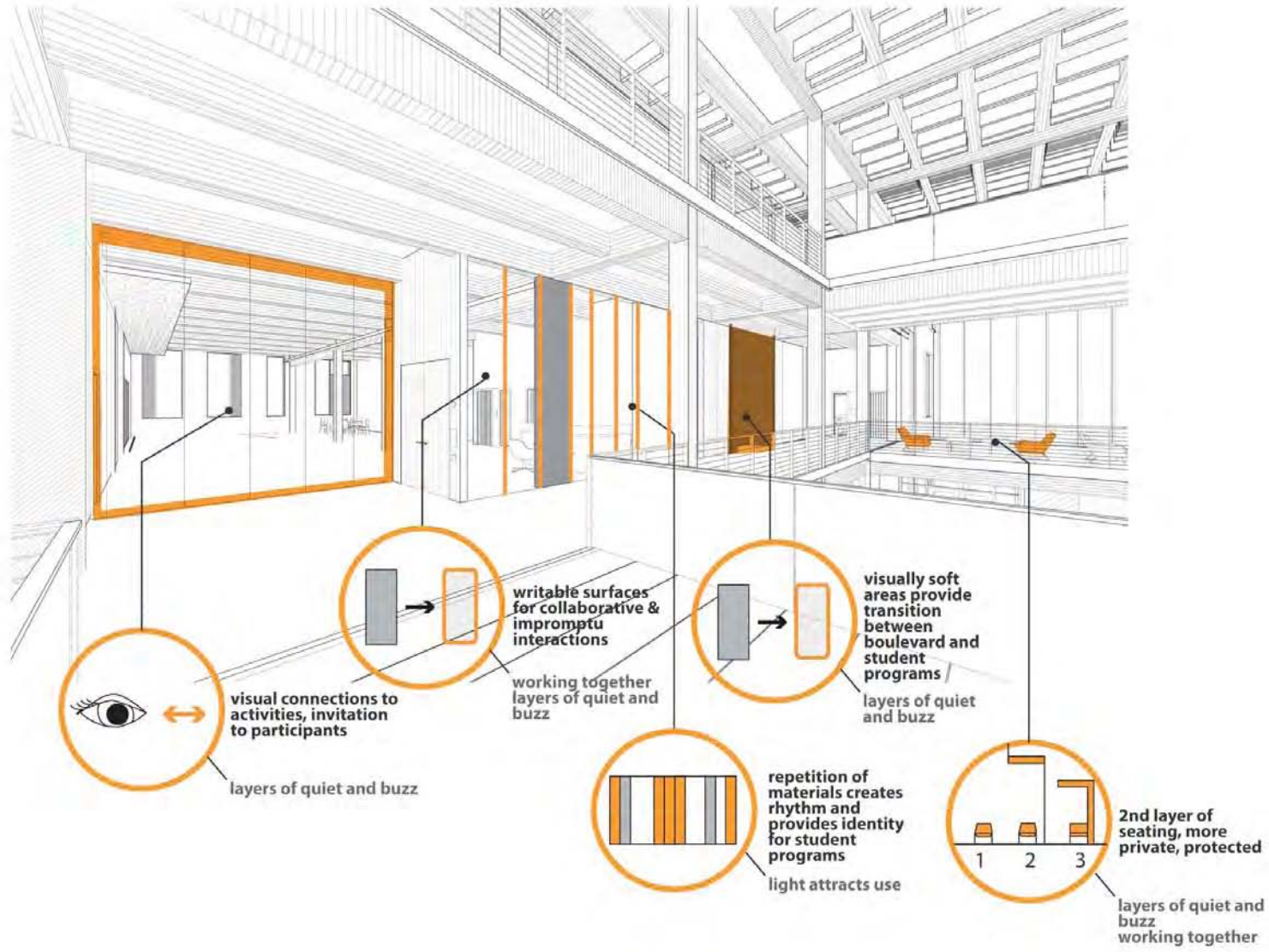
Working Together

Quiet spaces are insulated from the most public and high traffic areas and are accessed through transitional zones such as lounges.

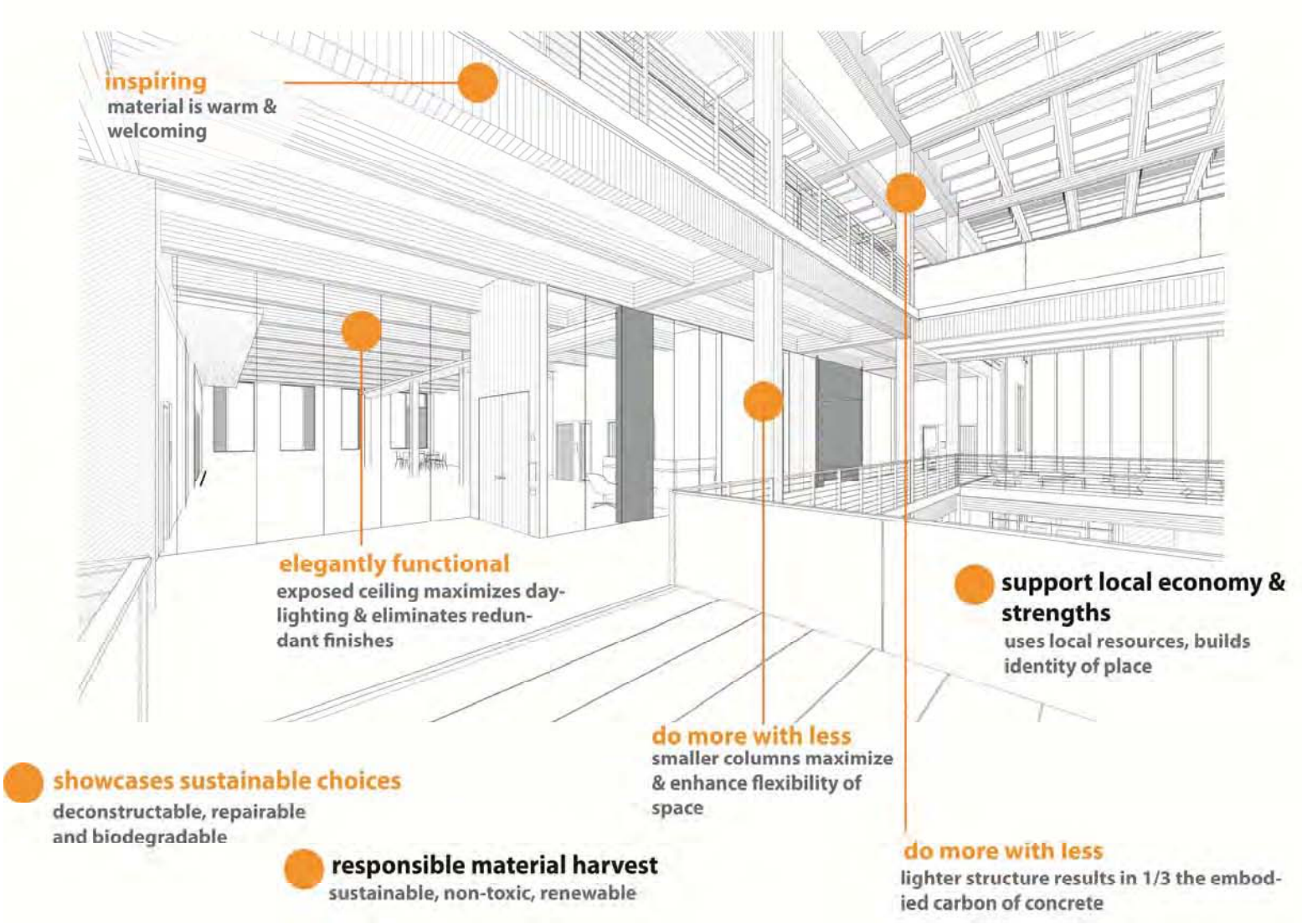
LAYERS AND TRANSITIONAL SPACES


Layers of quiet and buzz
Many front doors
Longevity and flexibility
Flexibility and Longevity
Destinations
Pass Through not Around
Layers of quiet and buzz
Working together
Through not
around
Working together
Longevity and flexibility
Digital layers

EMU INTERIOR DESIGN

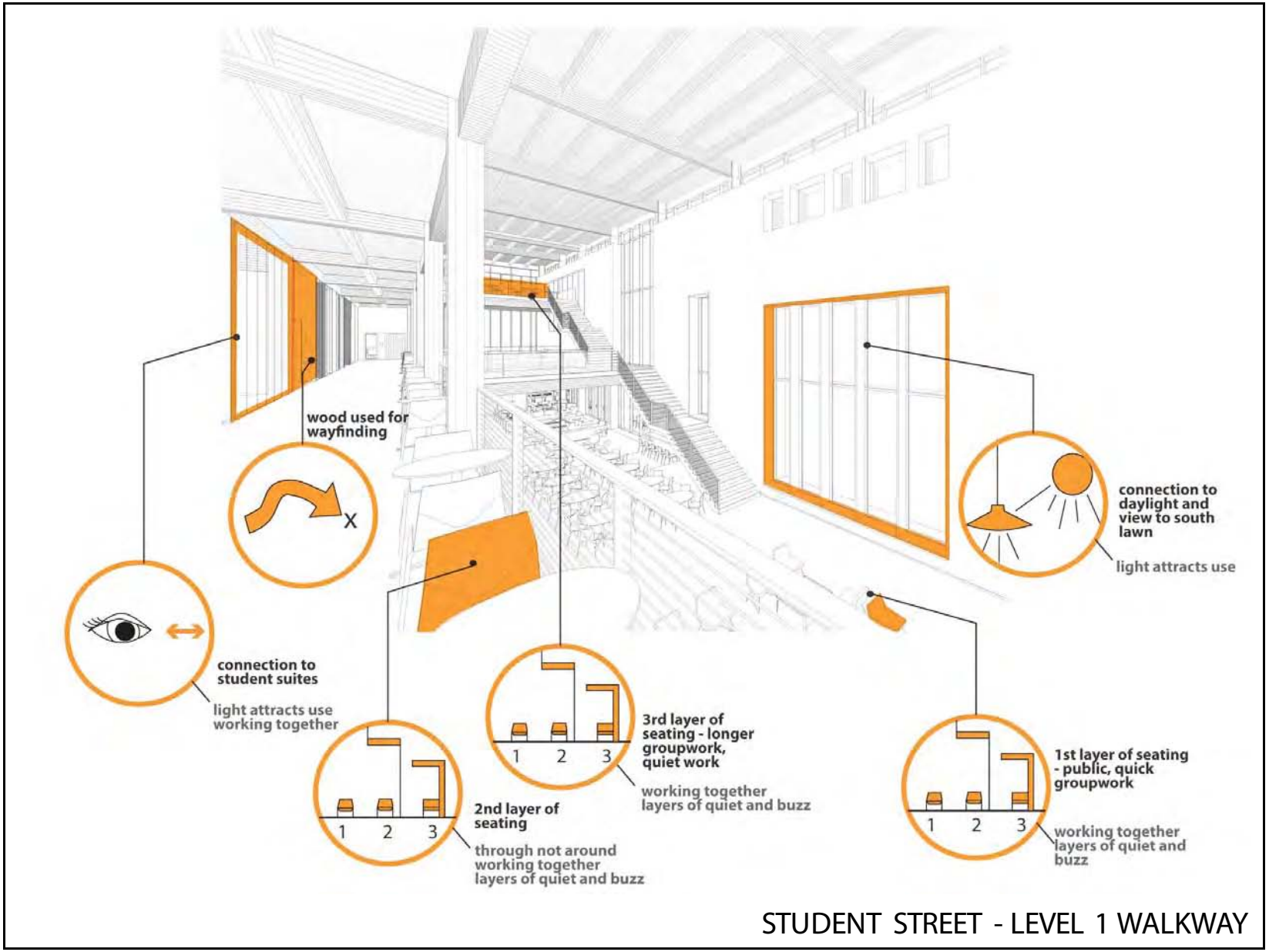


STUDENT STREET – LEVEL 1 BRIDGE



SUSTAINABILITY AND PROJECT GOALS REINFORCED BY STRUCTURAL SYSTEM SELECTION

STUDENT STREET – LEVEL 1 BRIDGE



STUDENT STREET - LEVEL 1 WALKWAY

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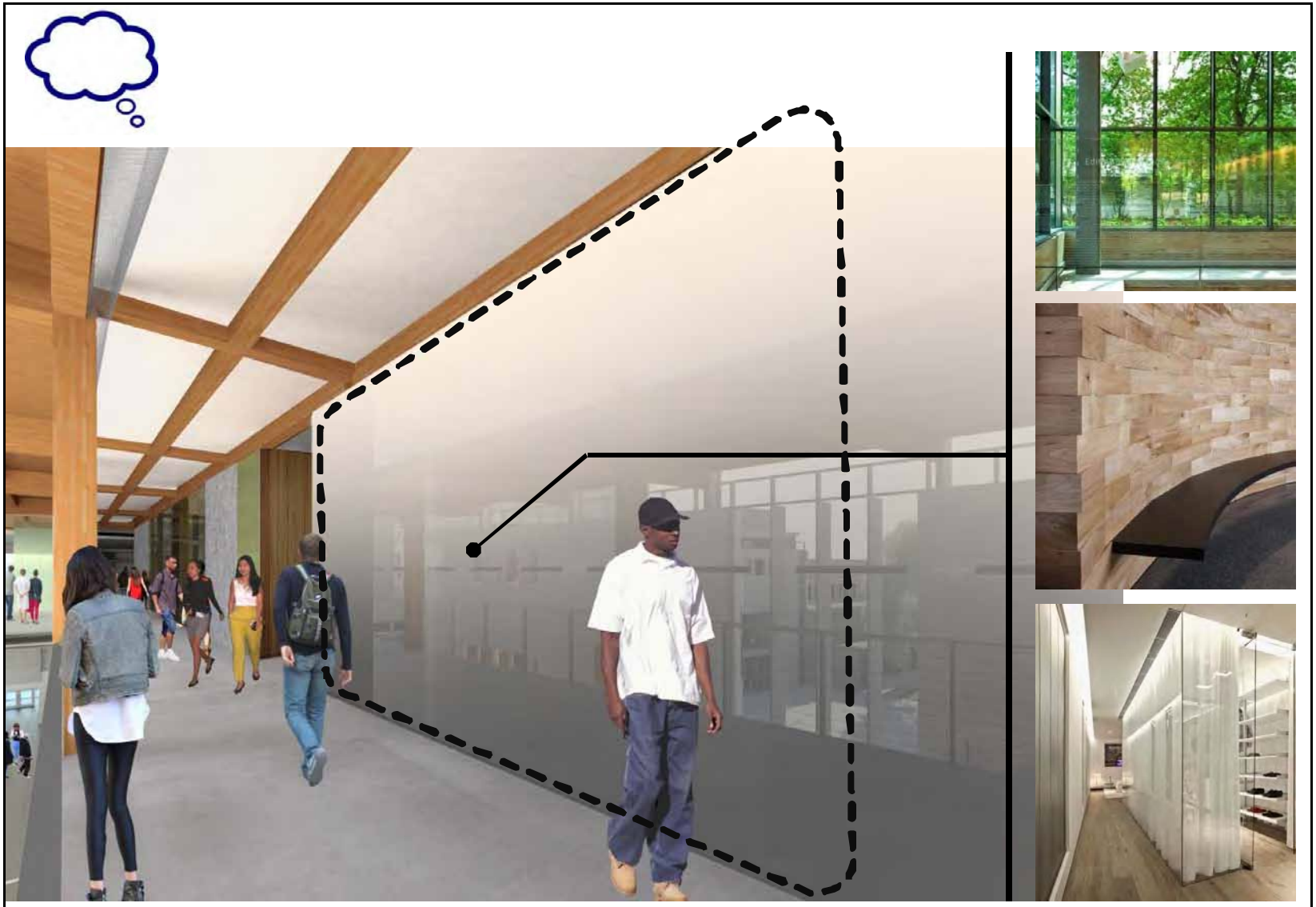
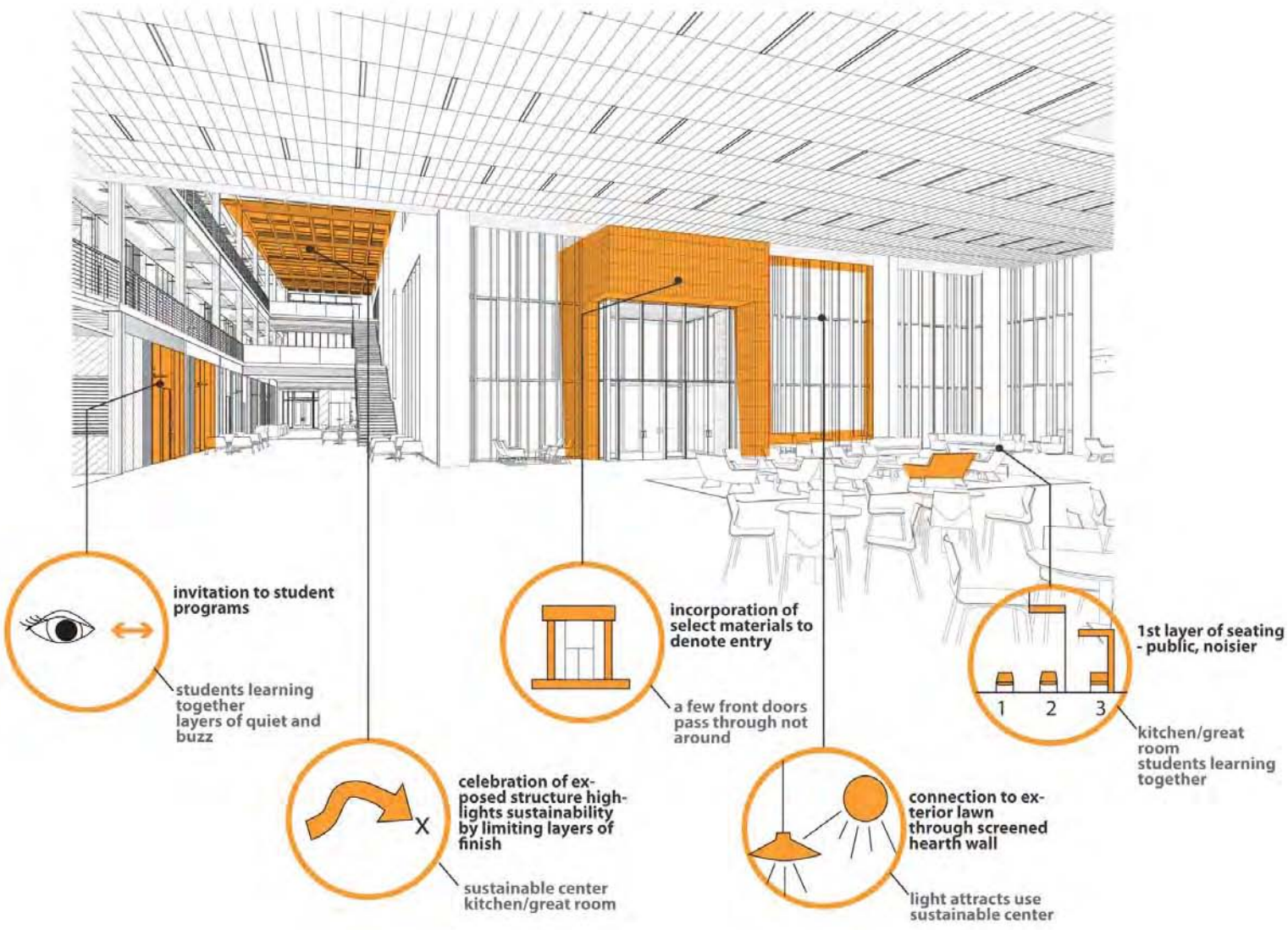


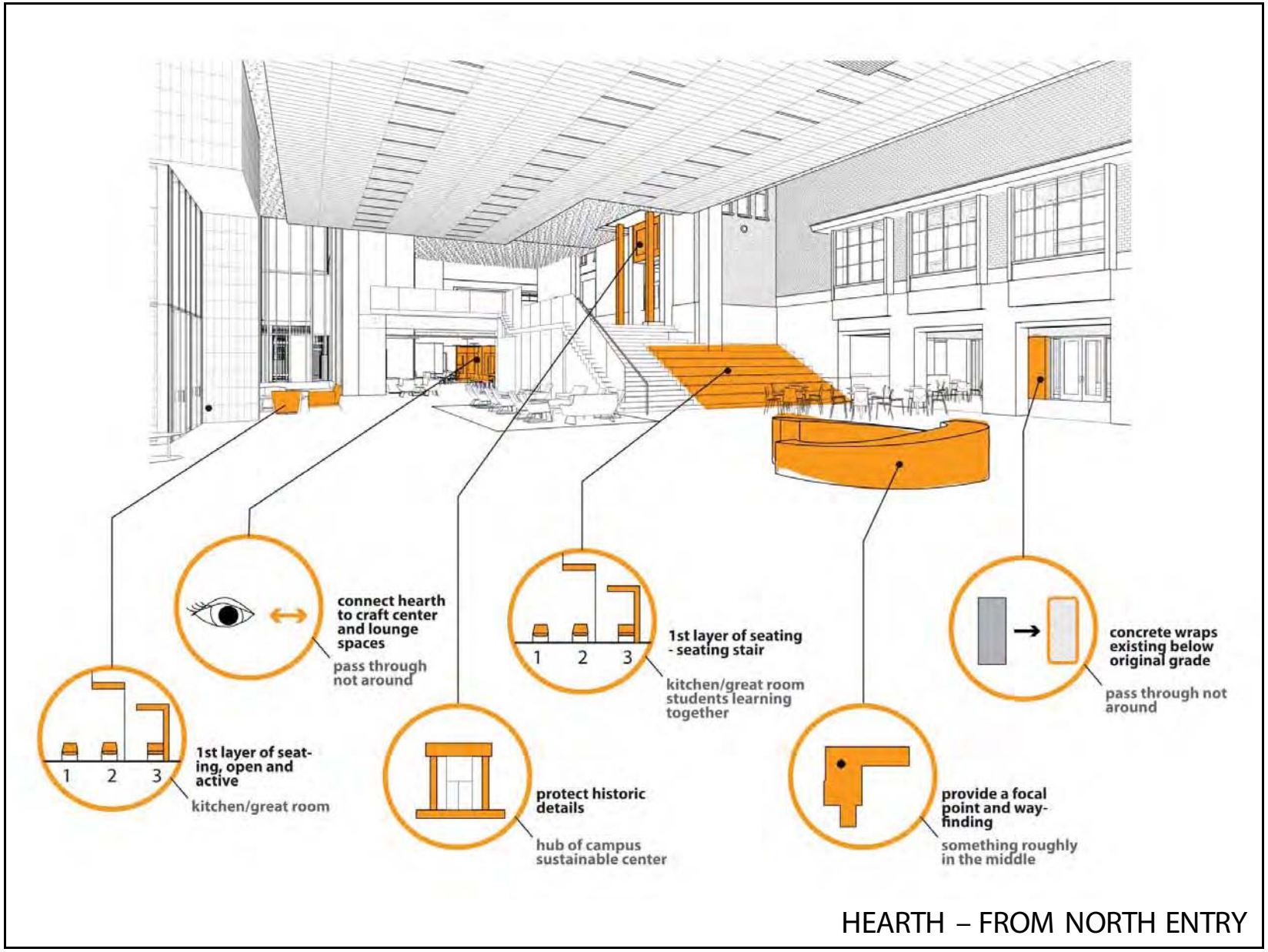
STUDENT STREET – LEVEL 2 MULTI-PURPOSE


NEW ENTRY
HISTORIC ENTRY
NEW ENTRY BELOW HISTORIC FACADE
GROUND FLOOR PLAN



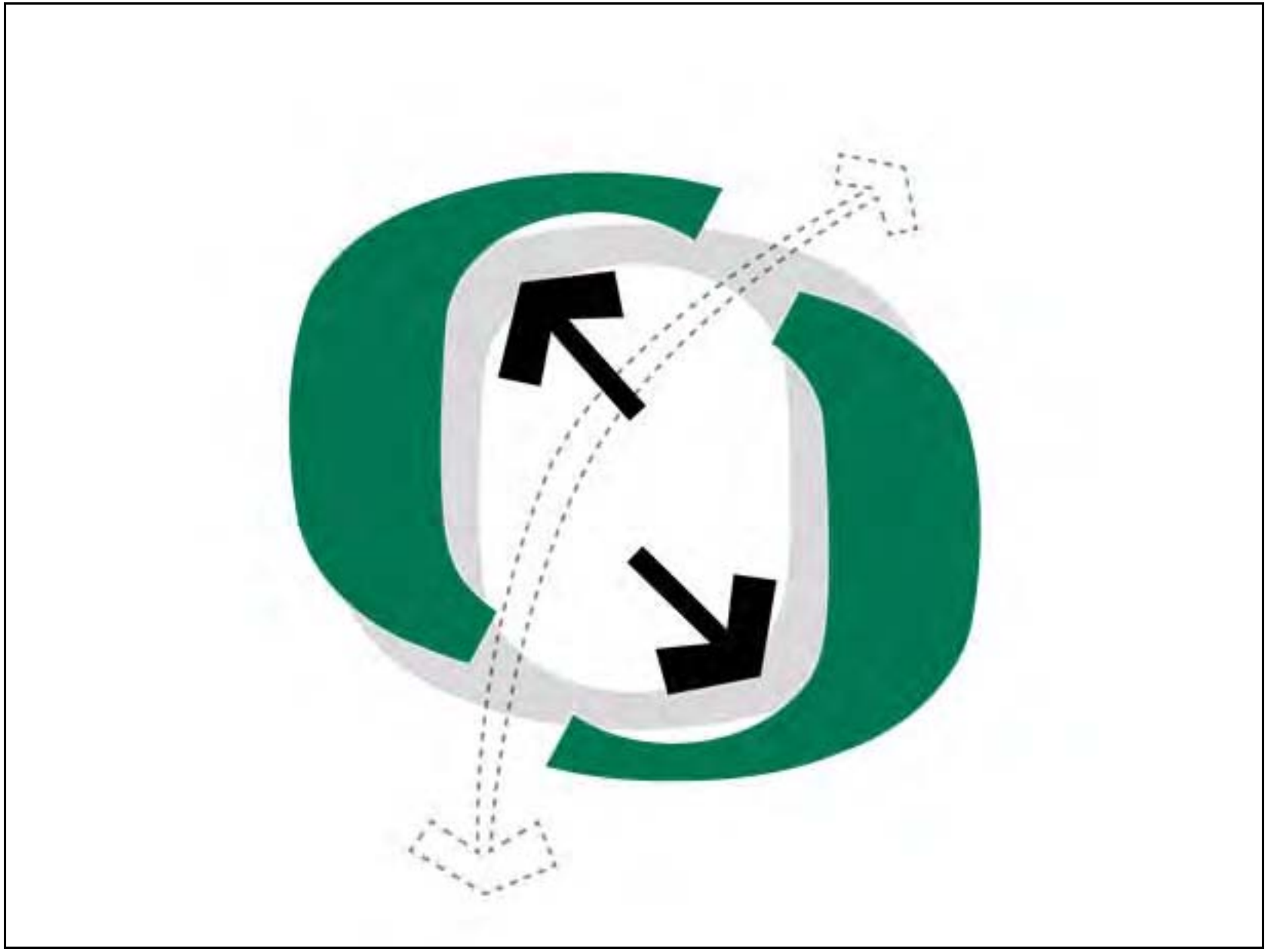
HEARTH – FROM BREEZEWAY

HEARTH – FROM BREEZEWAY



HEARTH – FROM NORTH ENTRY

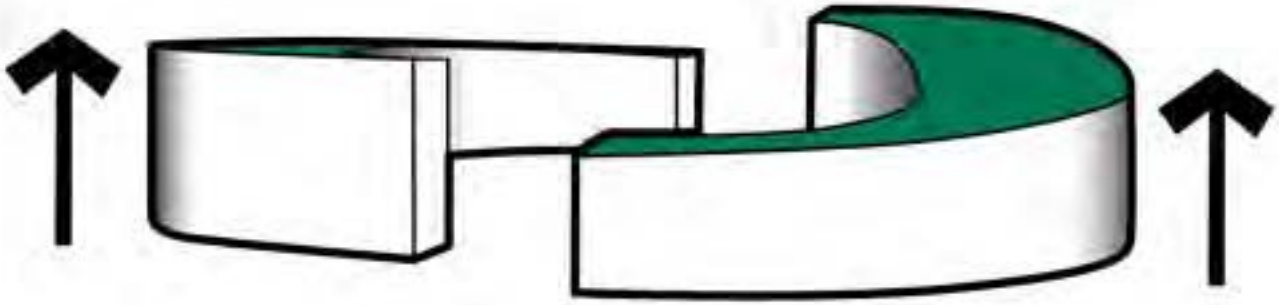
our one “O”

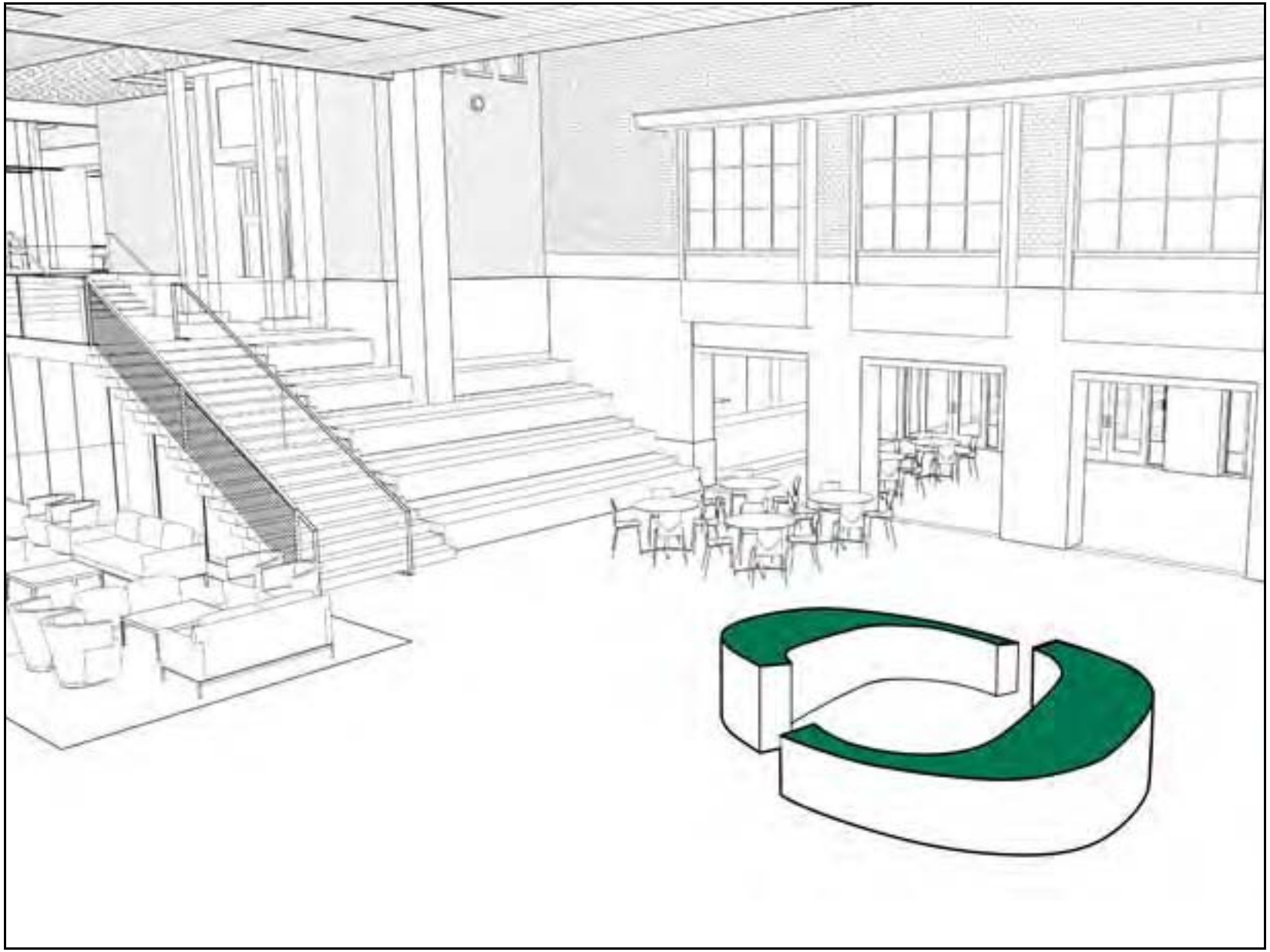


SIMPLICITY / MATERIAL REUSE

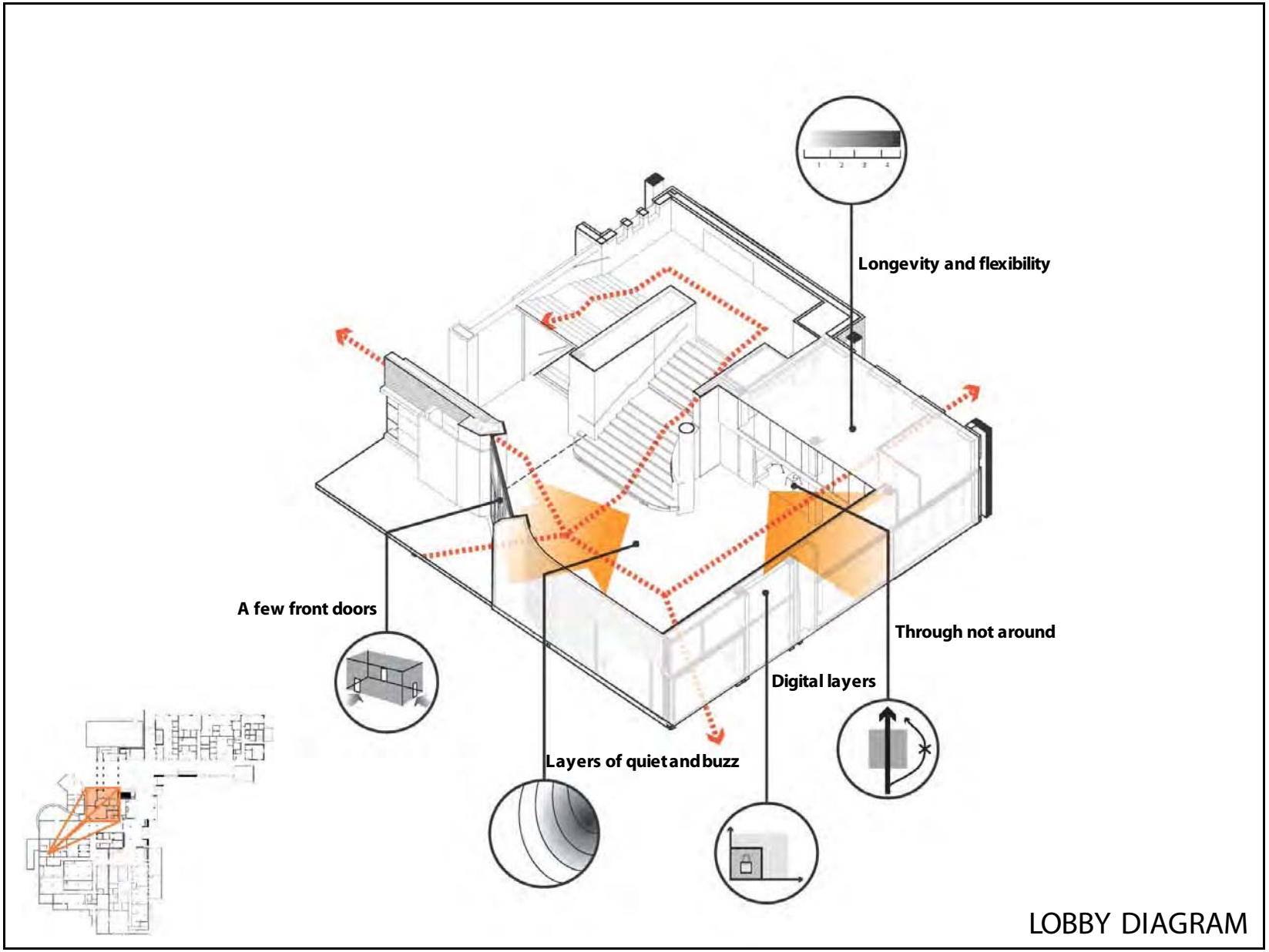
SECURITY

24 HOUR USE

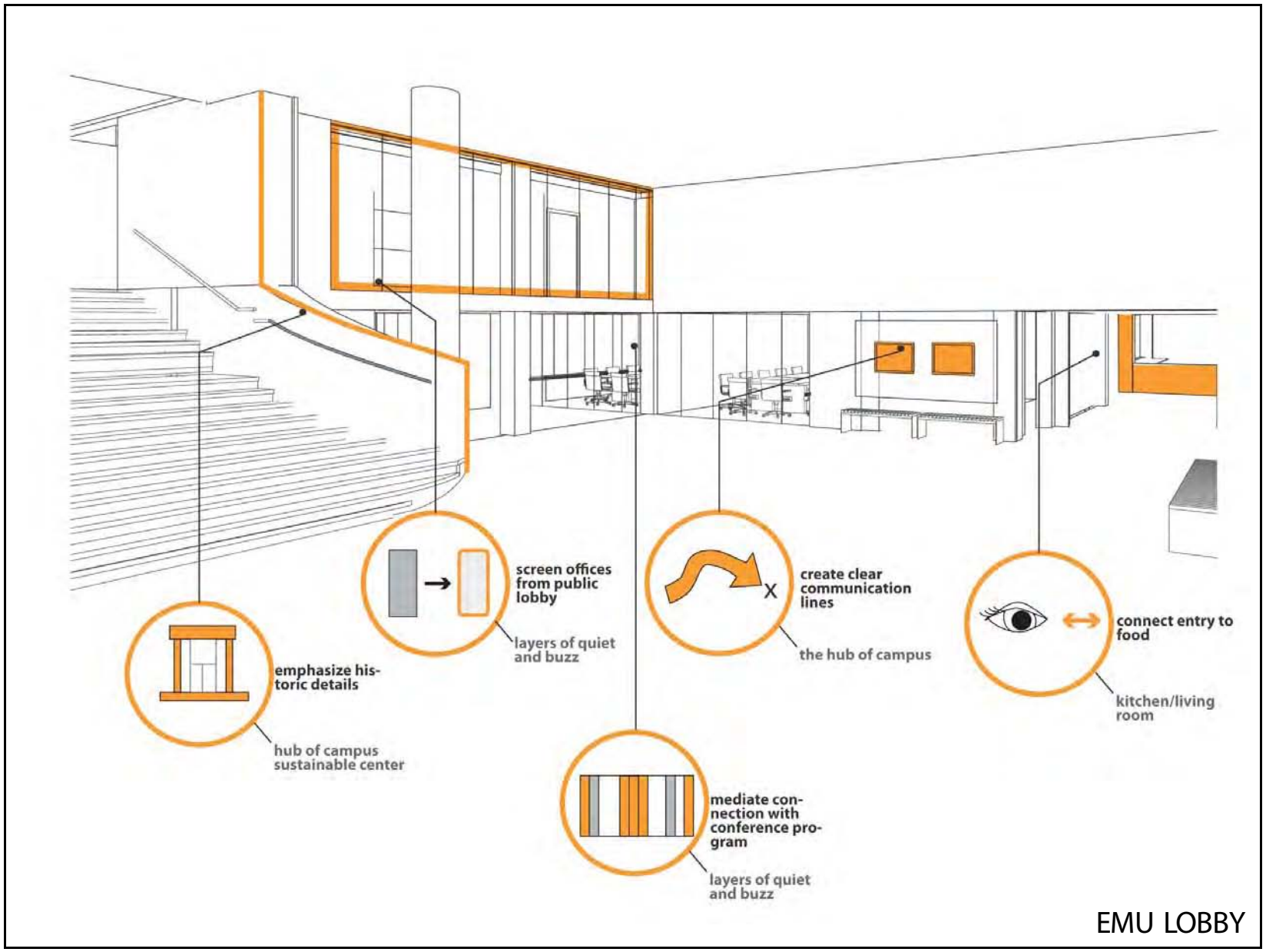




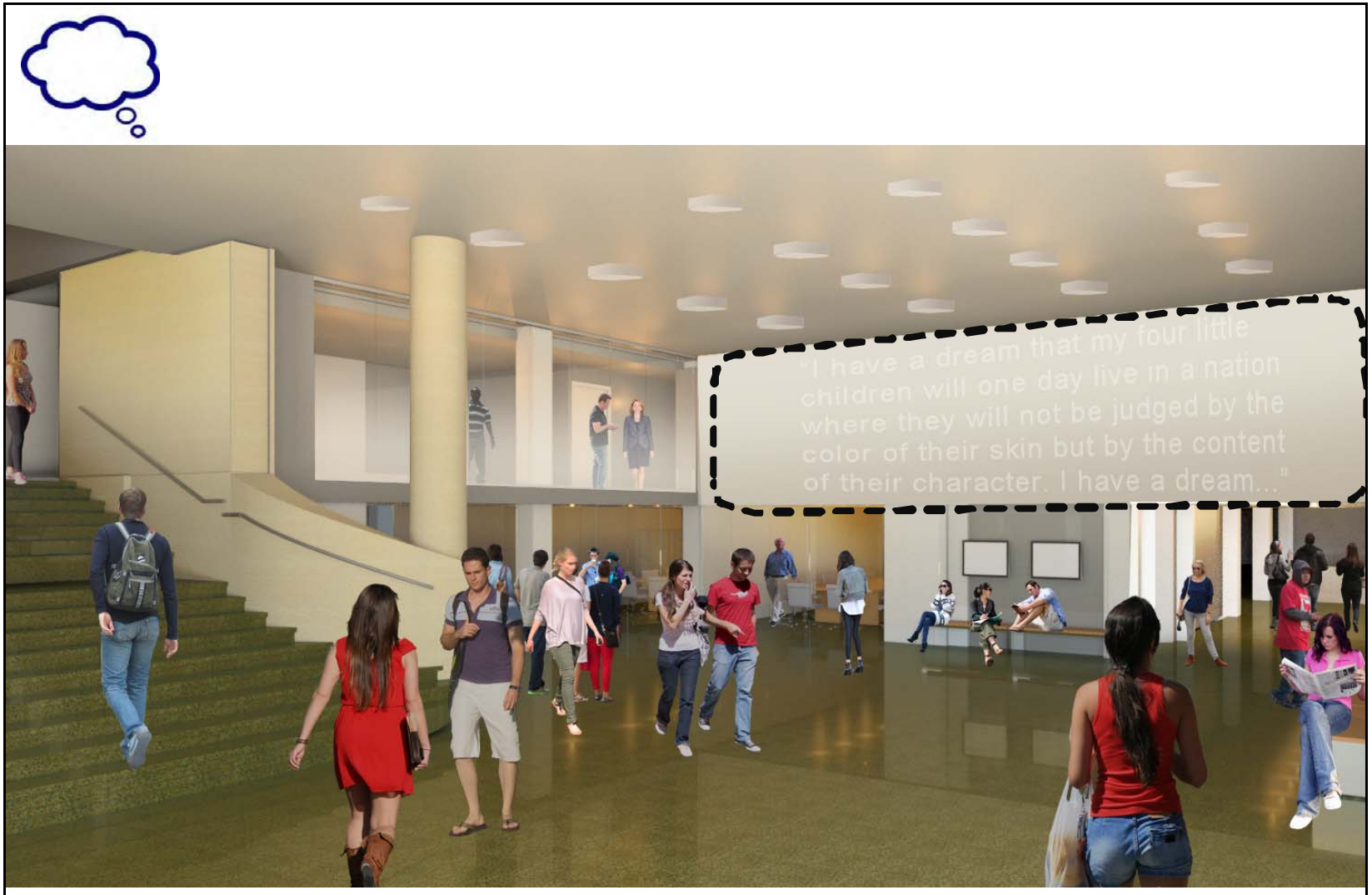
HEARTH – FROM NORTH ENTRY



LOBBY DIAGRAM

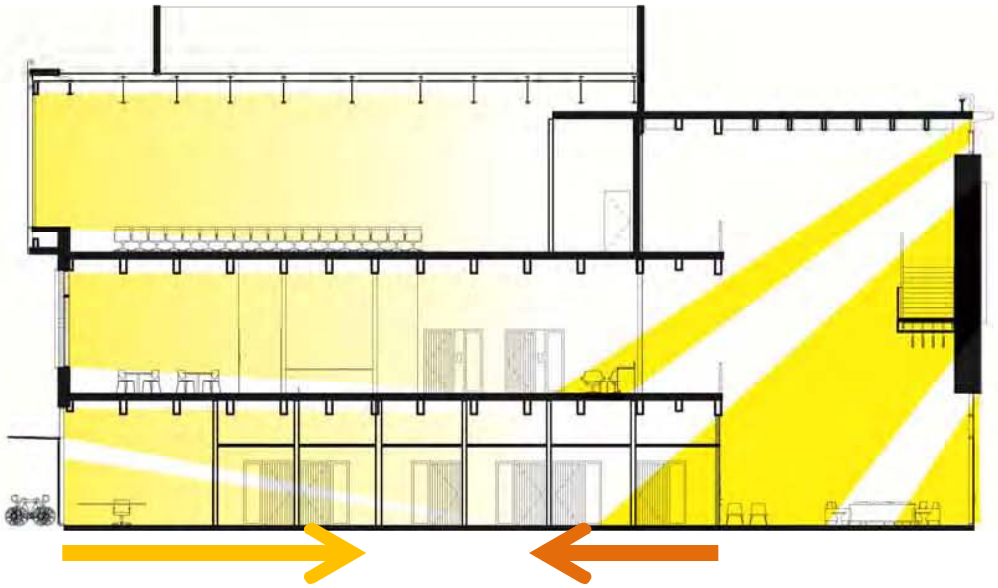

screen offices from public lobby
layers of quiet and buzz
create clear communication lines
the hub of campus
connect entry to food
kitchen/living room
emphasize historic details
hub of campus sustainable center
mediate connection with conference program
layers of quiet and buzz

EMU LOBBY

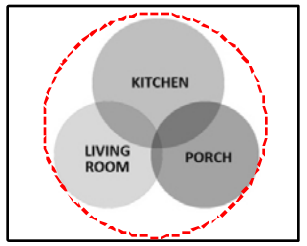

"I have a dream that my four little children will one day live in a nation where they will not be judged by the color of their skin but by the content of their character. I have a dream..."

EMU LOBBY

Light Attracts Use



ACCESS TO DAYLIGHT – NORTH WING PROGRAM SUITES



Working Together

Light Attracts Use

VISUAL CONNECTION TO PUBLIC SPACES

WOMEN'S CENTER PROGRAM SUITE – VIEW TOWARDS STUDENT BLVD

STUDENT ACTIVITIES & RESOURCE CENTER SUITE

POLISHED CONCRETE

WALK OFF CARPET

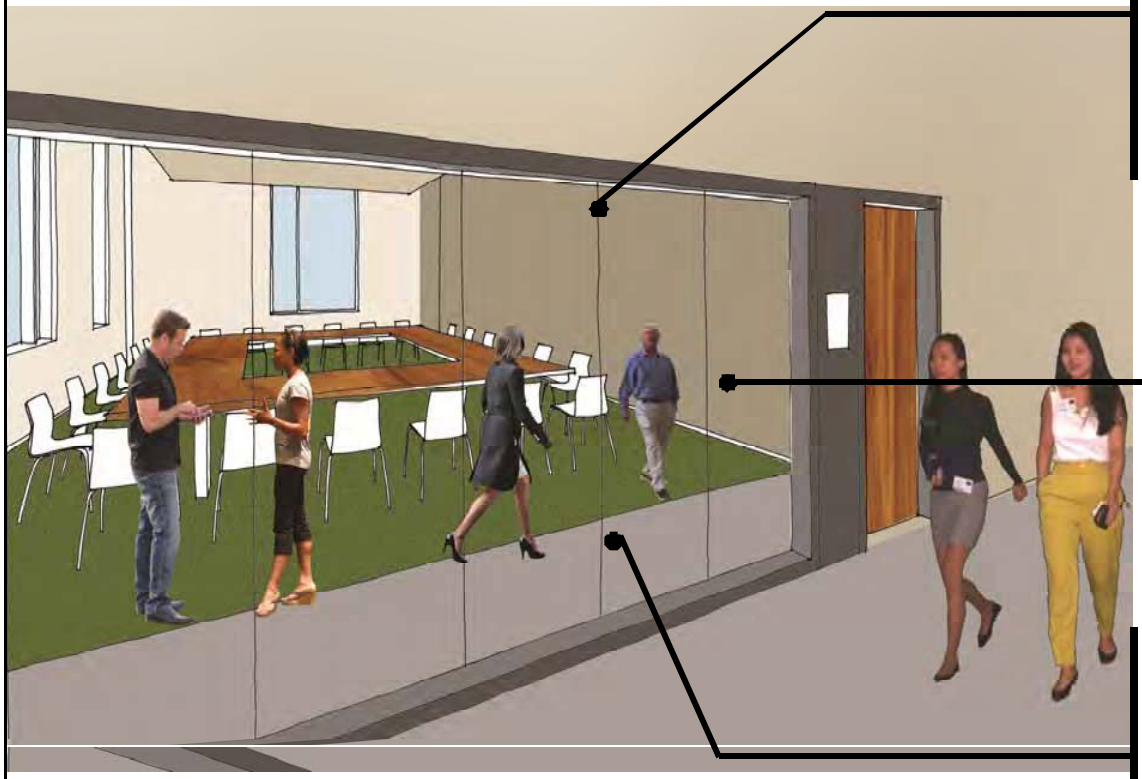
CARPET 1

CARPET 2

TILE

RESILIENT FLOORING

FINISH PLAN – NORTH WING GROUND FLOOR

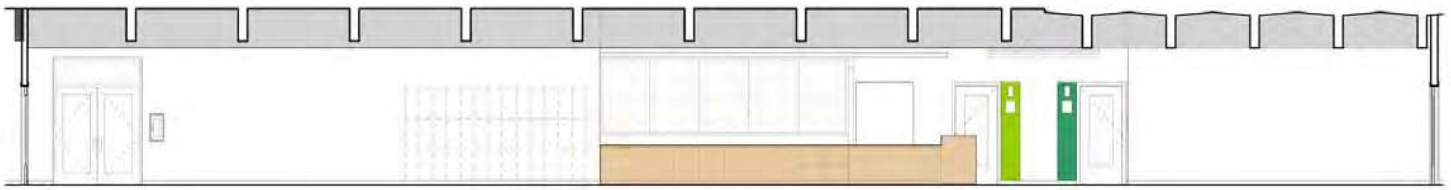


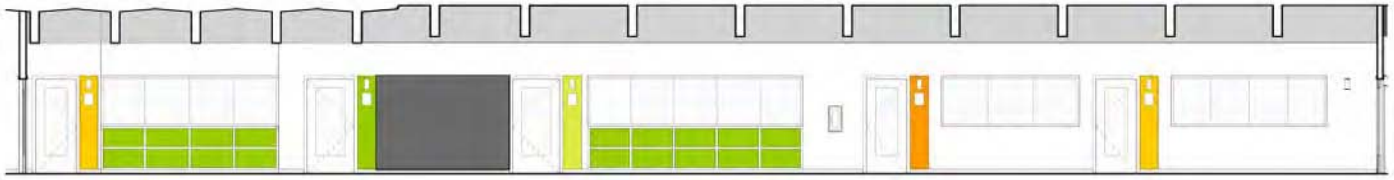
CONFERENCE ROOMS

Bar Grille

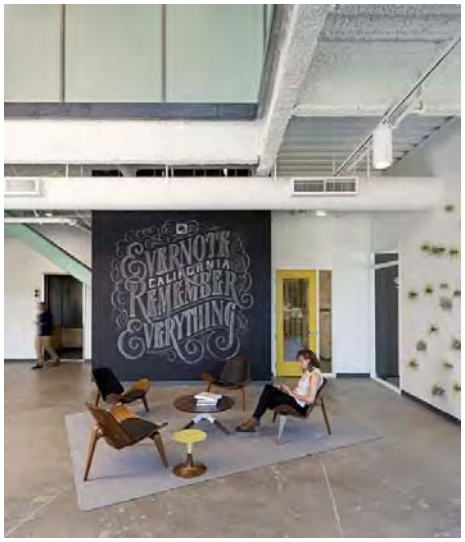
CHILLED BEAMS

CRAFT CENTER - RECEPTION





CRAFT CENTER – PUBLIC SPACE ELEVATIONS



CRAFT CENTER PRECEDENT

BREAK

PROJECT SPECIFIC SUSTAINABILITY MEASURES

ENERGY / HEALTH

RELATED SUSTAINABLE DESIGN GOALS

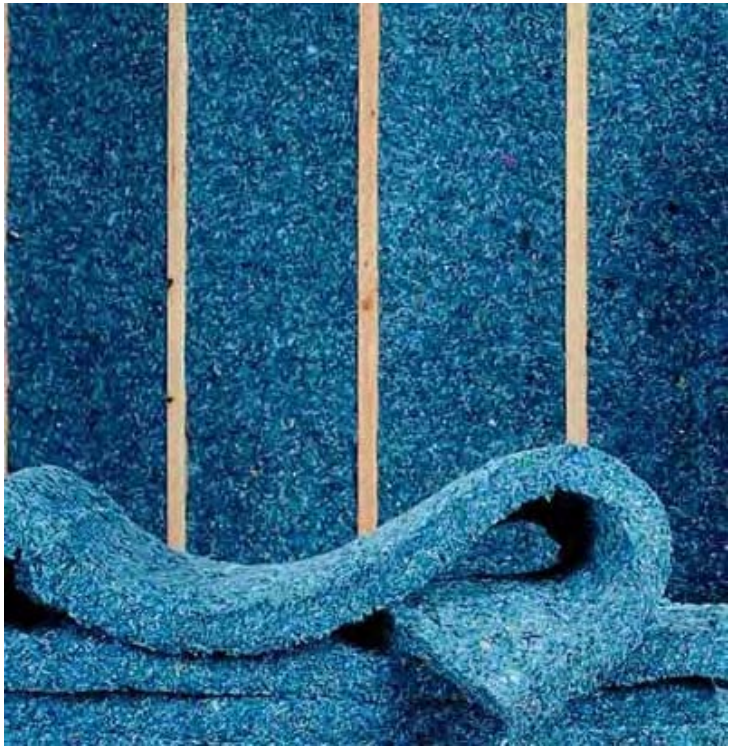
- Performance metric around energy use
  - ~~Oregon Model min. (35% better than OR code)~~
    Currently estimating 21-30%
  - With Added Solar Thermal 25-36%
  - With Steam Tunnel Heat Recovery 29-42%
  - Together 30-44%
- Provide daylighting for most student offices and views for 75% of regularly occupied spaces
- PV Ready (investigate third party funding of demonstration PV array)

ENERGY EFFICIENT ENVLP.

INSULATION

TARGET: AS MUCH INSULATION AS PAYS BACK USING LCCA

ANTICIPATED SAVINGS 3-5% ~~1% - 3%~~



STRATEGIES:

Currently Modeling:

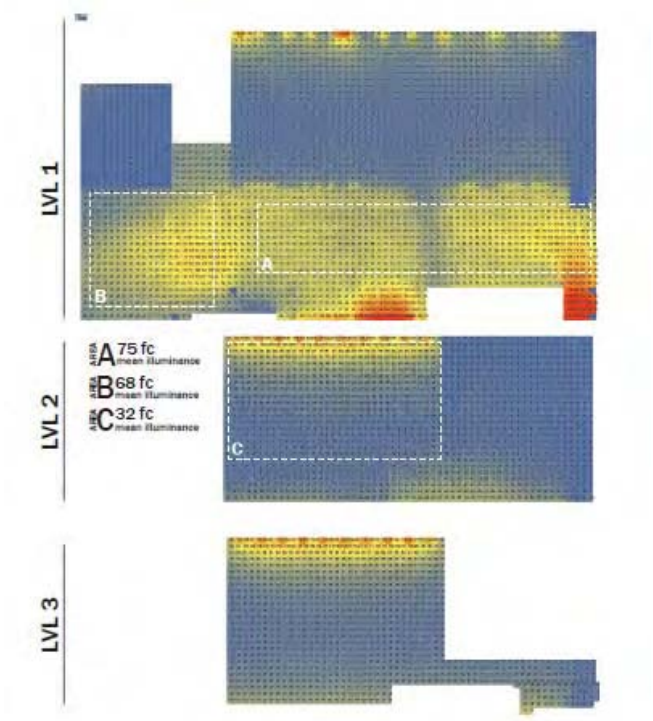
- R-40 roof insulation
- R-15 wall insulation
- R-10 floor slab insulation

ENERGY EFFICIENT ENVLP.

WINDOWS

TARGET: 32% ~~30%~~ WINDOWS WITH NO IMPACT TO DAYLIGHTING

ANTICIPATED SAVINGS INCLUDED IN PREVIOUS SLIDE

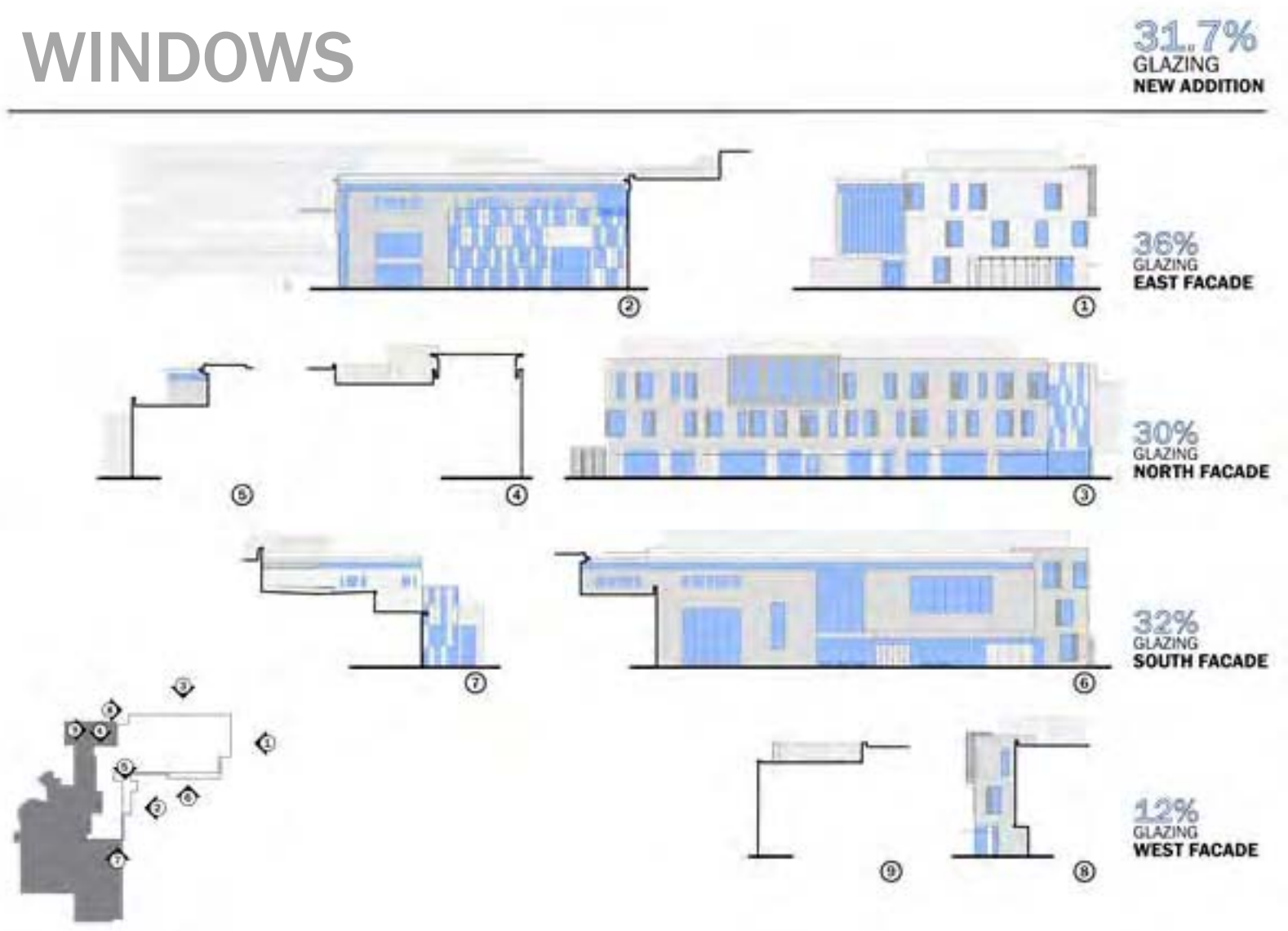


STRATEGIES:

Currently Modeling:

- U = 0.29 ~~0.33~~
- Thermally broken frames
- High performance low-e coating (e=0.05)
- Tinted / reflective coatings tuned per elevation and floor level

WINDOWS



UPDATED FACADES

OPTIMIZE DAYLIGHTING

TARGET: LIGHTS OFF 50% OF DAYLIGHT HOURS FOR 75% ~~90%~~ OF SPACES

ANTICIPATED SAVINGS 6 - 9% ~~5% - 8%~~

STRATEGIES:

- Use light colors on walls and ceilings
- Locate windows high in space – not below 30”
- Locate closed offices away from windows
- Balance brightness to minimize contrast
- Separate circuits for zoning flexibility in daylit zones

LIGHTING SYSTEM

EFFICIENT LUMINAIRES

TARGET: LIGHTING POWER DENSITY 35% LESS THAN CODE

ANTICIPATED SAVINGS INCLUDED IN PREVIOUS SLIDE

STRATEGIES:

- Efficient fixture selection
- Optimize ballast selection
- Efficient lamp selection
- LED technology for exits signs and other applications

LIGHTING SYSTEM

SENSORS AND CONTROLS

TARGET: EXCEED CODE AND USE VACANCY SENSORS

ANTICIPATED SAVINGS INCLUDED IN PREVIOUS SLIDE

STRATEGIES:

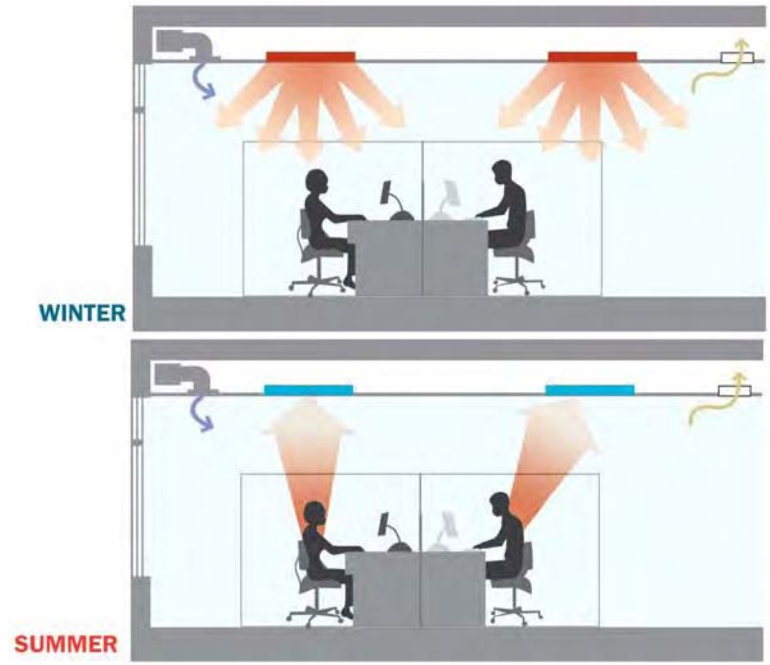
- Vacancy sensors
- Selective switching
- Egress lighting scheduled off during unoccupied periods
- Exterior lighting controls (lights extinguished after occupied period)
- Exterior LED lighting – different light levels for different times

MECHANICAL SYSTEM

~~RADIANT PANELS / CHILLED SAILS~~ SEE MECH. MATRIX

TARGET: MAXIMIZE ENERGY SAVINGS + IMPROVED COMFORT

ANTICIPATED SAVINGS 12-16% ~~10% - 20%~~



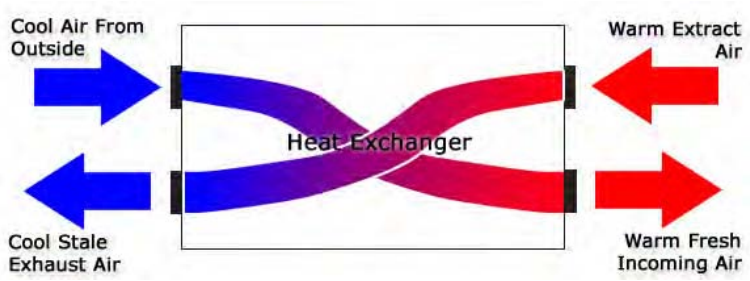
STRATEGIES:

- Radiant heating in all new spaces and many retrofit areas
- Minimized mechanical system air leaks and static pressure losses
- Airflow / temperature setback in unoccupied spaces through occupancy sensors / schedules
- Separate make-up air units for high ventilation areas
- Variable ventilation based on CO2 control
- Night-flush cooling cycle

HEAT RECOVERY &

EFFICIENT SYSTEMS

NOT INCLUDED in BASE



STRATEGIES:

Currently being priced as Alternates.

Kitchen Refrigeration Systems
Heat Pump Hot Water
Steam Tunnel Reheat
Heat Recovery on Dishwashing
Craft Center Makeup Air
Variable Flow on Kitchen Makeup Air
Water Cooled Refrigeration
Exhaust Hoods

- Minimize exhaust hood airflow and run time
- Separate make-up air unit set at lower temperature

MECHANICAL SYSTEMS SELECTION CRITERIA

STEP 1:

REVIEW FIRST COST
RELATIVE TO BUDGET

STEP 2:

RANK IMPORTANCE OF ATTRIBUTES ACCORDING
TO IMPORTANCE TO UO

10

ENERGY
(ENERGY REDUCTION, OPERATING COST)

AIR QUALITY
(POLLUTANT CONTRL, CO2 LEVELS)

COMFORT
(THERMAL COMFORT, AIR MOVEMENT, SURFACE TEMPERATURES)

FLEXIBILITY
(COST AND EASE OF RECONFIGURATION)

ACOUSTICS
(SPEECH PRIVACY, NOISE LEVELS, SOUND TRANMISSION)

AESTHETICS
(INTEGRATION WITH ARCHITECTURE)

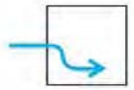
EASE OF MAINTENANCE
(SYSTEM SIMPLICITY, "SET IT, FORGET IT.")

CONTROLLABILITY
(DEGREE OF INDIVIDUAL CONTROL, GRANULARITY OF CONTROLS)

0

MECHANICAL SYSTEMS SELECTION CRITERIA

STEP 3:
EVALUATE CHOICES – CHOOSING BY ADVANTAGES FRAMEWORK

	NORTH WING ADDITION			HEARTH & STUDENT ST.
	BEST	**BETTER**	**GOOD**	**BEST**
	HYDONIC RADIANT CEILING PANEL HEATING & COOLING	HYDRONIC HEATING W/ CONVECTORS & SUPPLY AIR, HYDRONIC CHILLED BEAMS	ALL AIR HEATING & COOLING	IN FLOOR RADIANT HEATING AND COOLING
VENTILATION TYPE				
FIRST COST	$$$$	$$$	$$	$$+
ENERGY	●●●	●●●	●●	●●●
AIR QUALITY	●●●	●●●	●	●●●
COMFORT	●●●	●●	●●	●●●
FLEXIBILITY	●	●	●●	●●
ACOUSTICS	●●●	●●●	●●	●●●
AESTHETICS	INTEGRATED CEILING SYSTEM	CAN BE EXPOSED OR CONCEALED	REQUIRES CEILING FINISH	HIDDEN SYSTEM
MAINTENANCE	●●	●●	●	●●●
CONTROLLABILITY	●●●	●●●	●●	●●

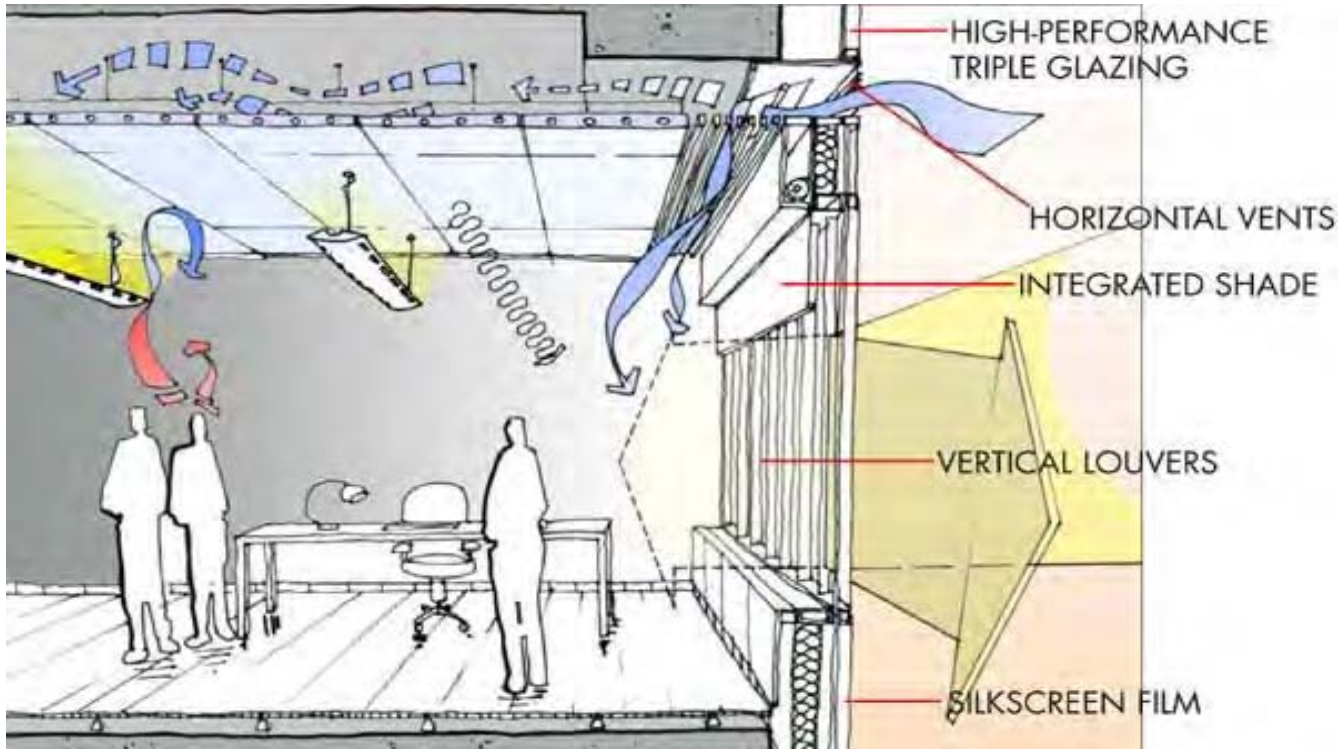
STEP 4: BRING SELECTION TO UO

ALT. SYSTEMS TO EXPLORE

DISPLACEMENT VENTILATION

GOAL: SAVE ENERGY by TRACKING A LARGER TEMP. SWING (68-78 F)

STRETCH GOAL: EXPLORE ELIMINATION OF COOLING IN ATRIUM

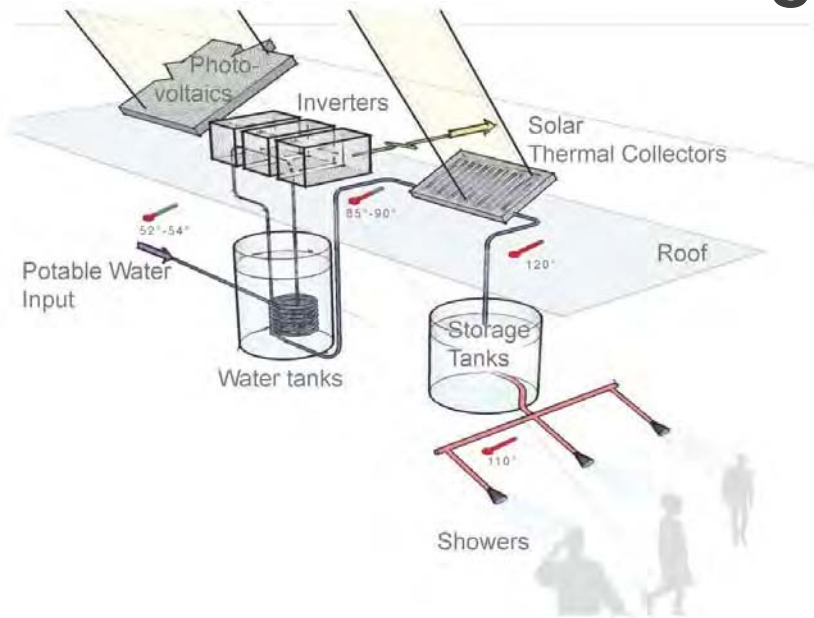


ALT. SYSTEMS TO EXPLORE

SOLAR HOT WATER

STRETCH GOAL: EXPLORE IMPLEMENTATION OF SOLAR HOT WATER

ANTICIPATED SAVINGS 4 - 6% ~~2% - 4%~~



STRATEGIES:

- Preheat water for kitchen equipment

MATERIALS

SUSTAINABLE DESIGN GOALS REVISITED

- Reuse ~~most of~~ materials from the demolished building in the new student union
- Recycle ~~90-95%~~ 75-80% of construction debris
- Prioritize sourcing products locally
- Minimize use of toxic products
- Local, Salvaged, then FSC certified wood
- Filter all materials decisions through a lens of Cost & Student Health
- Use to provide Identity & Inspiration
- Prioritize Durability, then Local / Reuse

CONSTRUCTION WASTE

DIVERSION FROM LANDFILL

TARGET: 75% ~~90%~~ ON SITE CONSTRUCTION WASTE DIVERSION

STRATEGIES:

- Streamline material palette to reduce complexity within the waste stream
- Reuse/ repurpose/recycle waste created on site to the greatest extent possible

EMBODIED ENERGY

MATERIAL REUSE

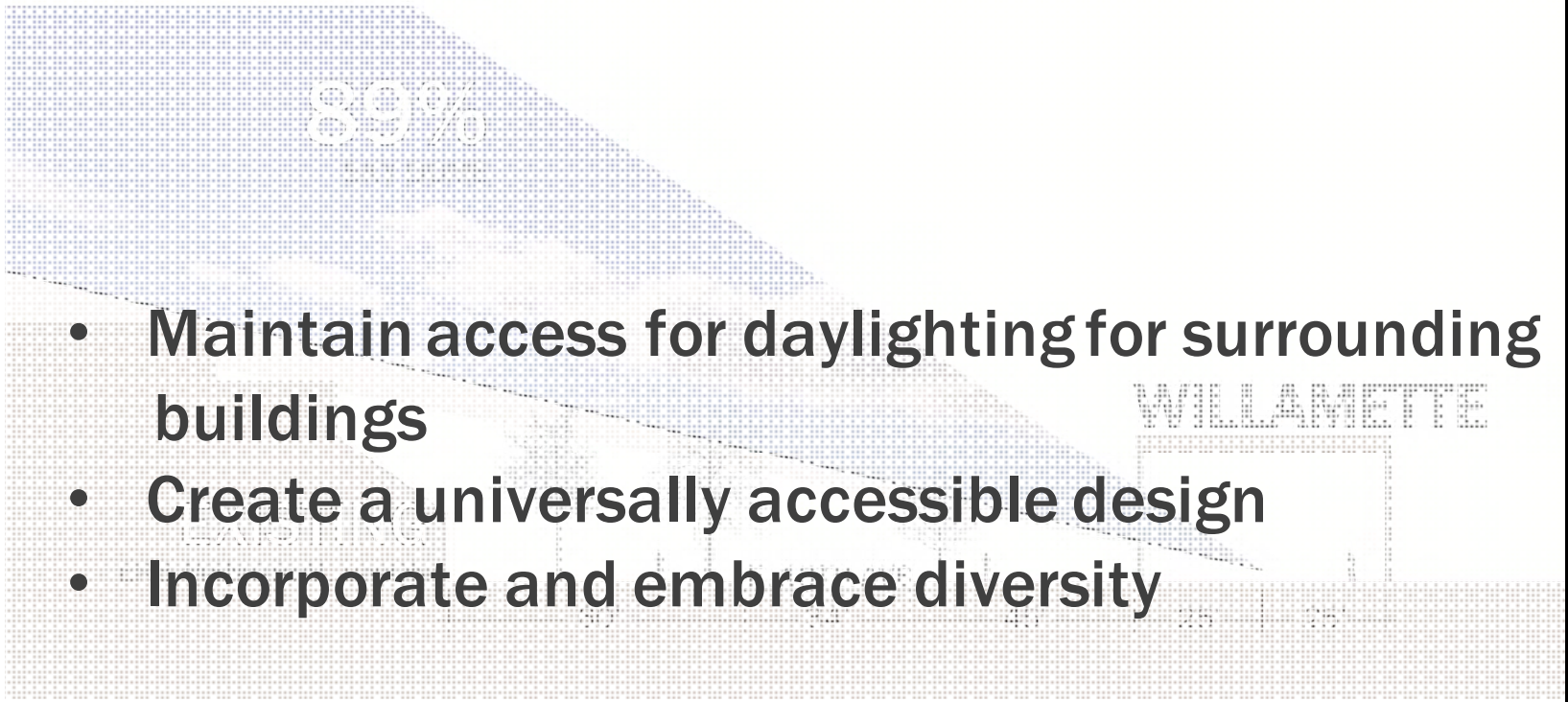
TARGET: REUSE/REPURPOSE 1-2% ~~5%~~ OF EXISTING BUILDING'S MATERIALS

STRATEGIES:

- Consider the material lifecycle loop from Cradle to Cradle
- Design for efficiency of material use to reduce on-site construction waste
- Design for future disassembly and reconstruction / reuse
- Design for reduced maintenance / replacement costs over the life of the building
- Stretch goal of 10% reuse

EQUITY

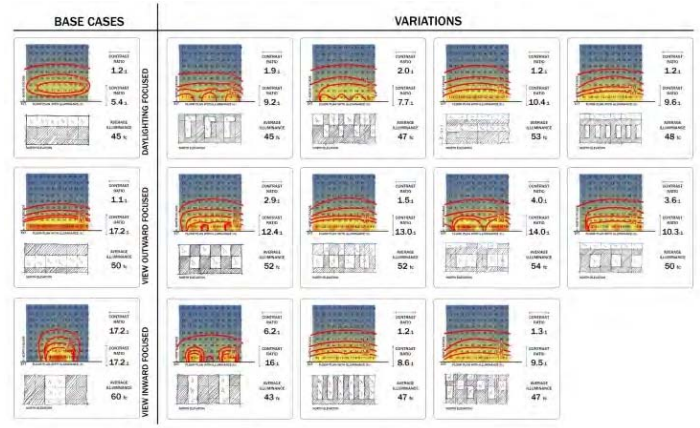
SUSTAINABLE DESIGN GOALS

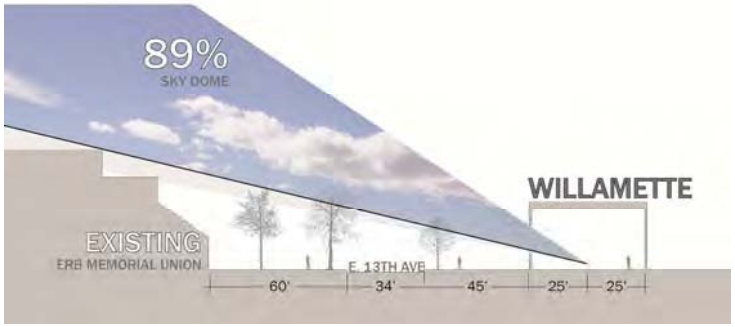


- Maintain access for daylighting for surrounding buildings
- Create a universally accessible design
- Incorporate and embrace diversity

EQUITY

RELATED STRATEGIES



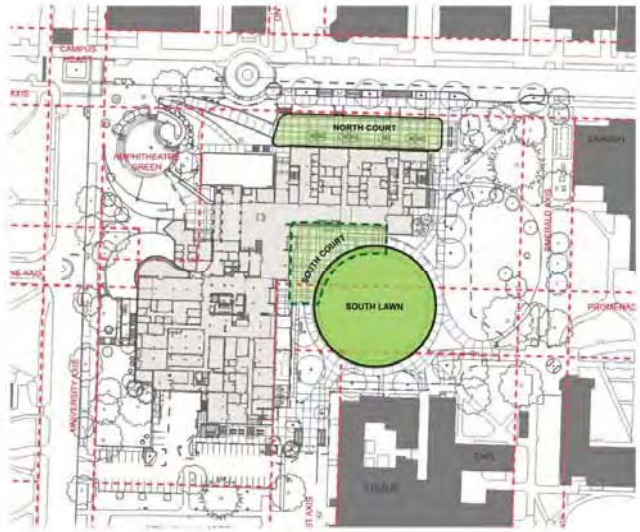


STRATEGIES:

- Provide daylighting for most student offices
- Minimize the building's negative impacts on neighboring buildings

EQUITY

RELATED STRATEGIES



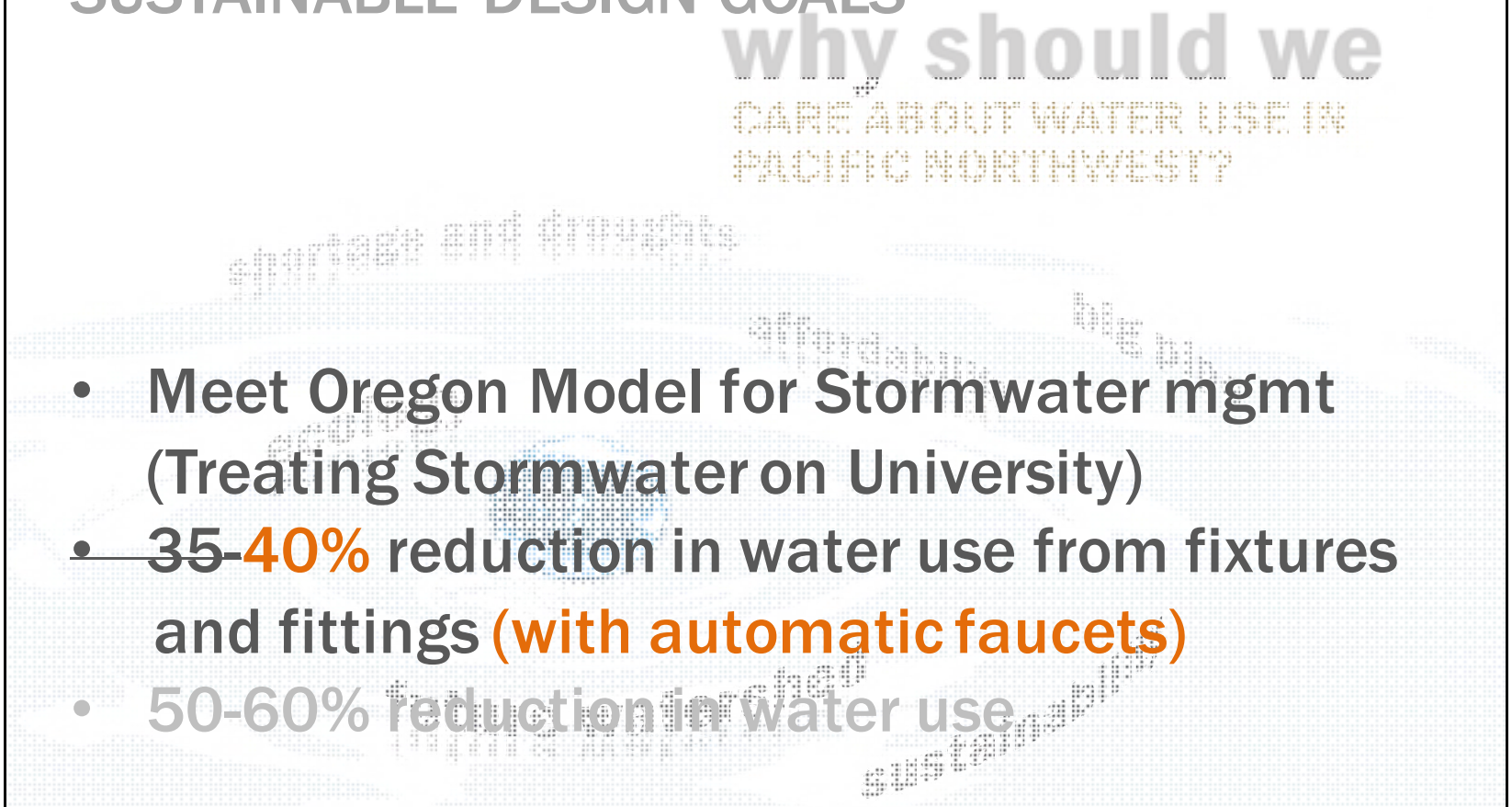
HUB OF CAMPUS

STRATEGIES:

- Use building form to create positive impacts on surrounding spaces to create sunny, wind protected outdoor spaces for students
- Create a fully accessible building
- Use shared spaces to promote cross pollination of ideas / shared identity
- Reduce societal impact of materials source

WATER

SUSTAINABLE DESIGN GOALS

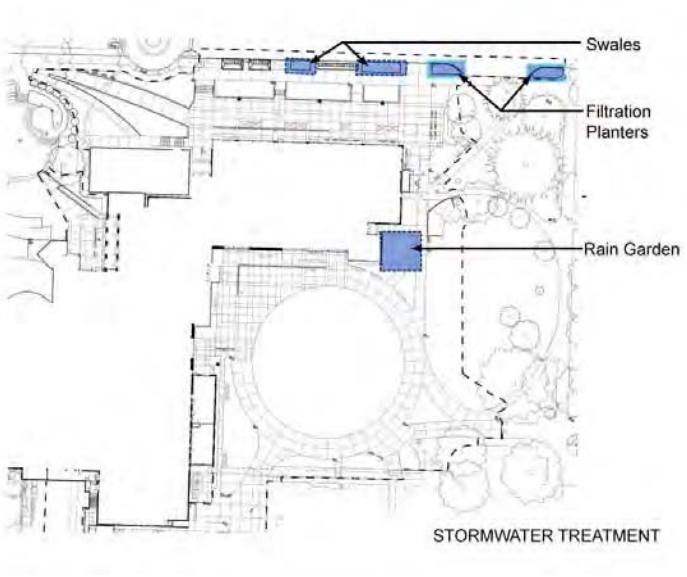


- Meet Oregon Model for Stormwater mgmt (Treating Stormwater on University)
- ~~35-~~40% reduction in water use from fixtures and fittings (with automatic faucets)
- 50-60% reduction in water use

WATER

STORMWATER TREATMENT

TARGET: MEET OREGON MODEL FOR STORMWATER MANAGEMENT



STRATEGIES:

- Treat 13th Street stormwater
- Treat loading dock stormwater
- Treat parking lot stormwater

LEED SCORECARD

LEED CREDITS

CURRENTLY PURSUED

SUSTAINABLE SITES
22 of 26 pts

WATER EFFICIENCY
6 of 10 pts (+2)

ENERGY & ATMOSPHERE
28 of 35 pts (+15)

MATERIALS & RESOURCES
6 of 14 pts

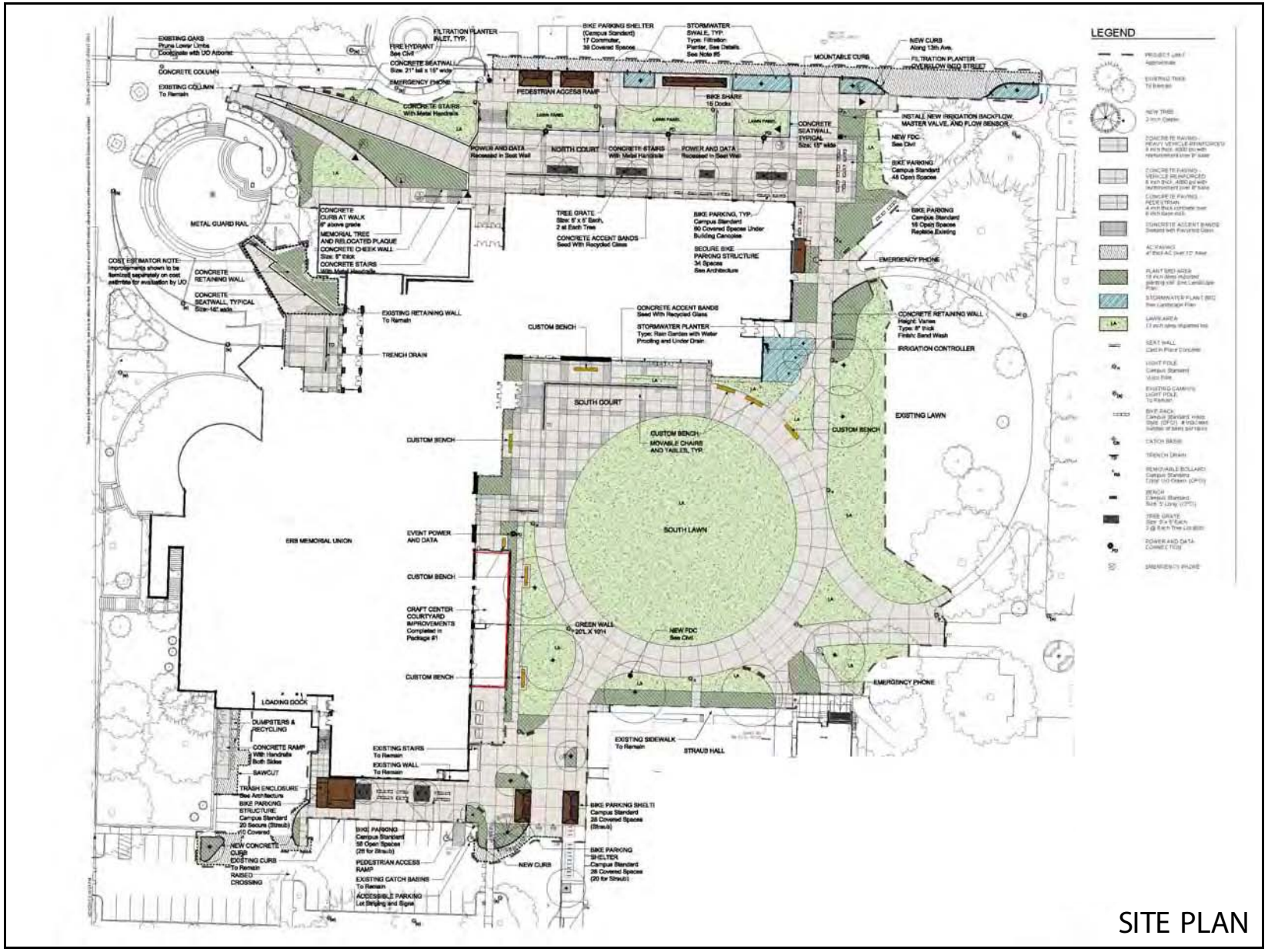
INDOOR ENVIRONMENTAL QUALITY
11 of 15 pts (+1)

INNOVATION IN DESIGN
6 of 6 pts

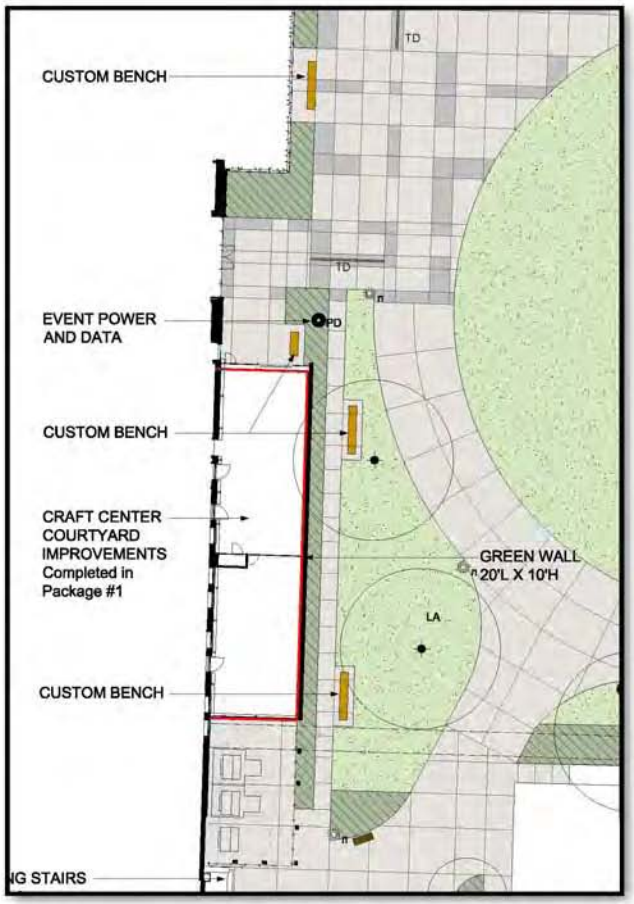
REGIONAL PRIORITY
0 of 4 pts

TOTAL **79 pts**
CURRENTLY TRACKING
LEED GOLD

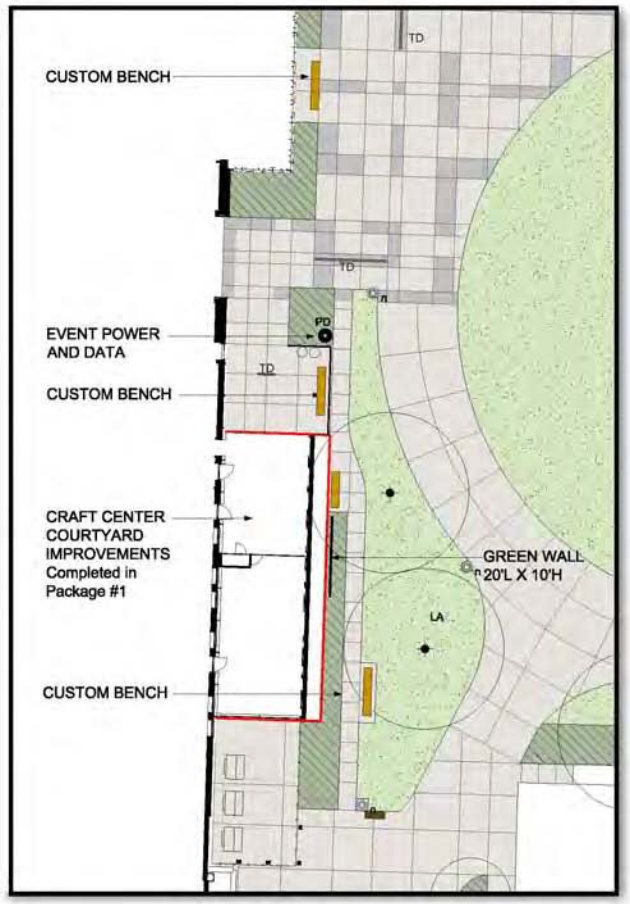
SITE DESIGN


LEGEND
SOUTH COURT
SOUTH LAWN
NORTH COURT
ERB MEMORIAL UNION
STRAUB HALL
EXISTING LAWN
CUSTOM BENCH
METAL GUARD RAIL
CONCRETE RETAINING WALL
EXISTING RETAINING WALL To Remain
TRENCH DRAIN
CONCRETE ACCENT BANDS Seed With Recycled Glass
STORMWATER PLANTER
IRRIGATION CONTROLLER
EMERGENCY PHONE
NEW FDC See Civil
BIKE PARKING Campus Standard 48 Open Spaces
BIKE PARKING Campus Standard 16 Open Spaces Replace Existing
BIKE PARKING, TYP. Campus Standard 60 Covered Spaces Under Building Canopies
SECURE BIKE PARKING STRUCTURE 34 Spaces See Architecture
TREE GRATE Size: 5' x 5' Each, 2 at Each Tree
CONCRETE SEATWALL, TYPICAL Size: 18" wide
INSTALL NEW IRRIGATION BACKFLOW, MASTER VALVE, AND FLOW SENSOR
CONCRETE SEATWALL, TYPICAL Size: 14" wide
CONCRETE CURB AT WALK 6" above grade
MEMORIAL TREE AND RELOCATED PLAQUE
CONCRETE CHEEK WALL Size: 6" thick
CONCRETE STAIRS With Metal Handrails
POWER AND DATA Recessed in Seat Wall
COST ESTIMATOR NOTE: Improvements shown to be itemized separately on cost estimate for evaluation by UO
CUSTOM BENCH MOVABLE CHAIRS AND TABLES, TYP.
EVENT POWER AND DATA
CRAFT CENTER COURTYARD IMPROVEMENTS Completed in Package #1
GREEN WALL 20' L X 10'H
NEW FDC See Civil
LOADING DOCK
DUMPSTERS & RECYCLING
CONCRETE RAMP With Handrails Both Sides
SAWCUT
TRASH ENCLOSURE See Architecture
BIKE PARKING STRUCTURE Campus Standard 20 Secure (Straub) 10 Covered
NEW CONCRETE CURB
EXISTING CURB To Remain
RAISED CROSSING
EXISTING STAIRS To Remain
EXISTING WALL To Remain
BIKE PARKING Campus Standard 58 Open Spaces (28 for Straub)
PEDESTRIAN ACCESS RAMP
EXISTING CATCH BASINS To Remain
ACCESSIBLE PARKING Lot Striping and Signs
NEW CURB
BIKE PARKING SHELTER Campus Standard 28 Covered Spaces (Straub)
BIKE PARKING SHELTER Campus Standard 28 Covered Spaces (20 for Straub)
EXISTING SIDEWALK To Remain
EXISTING OAKS Pruna Lower Limbs Coordinate with UO Arborist
CONCRETE COLUMN
EXISTING COLUMN To Remain
FIRE HYDRANT See Civil
CONCRETE SEATWALL Size: 21" tall x 18" wide
EMERGENCY PHONE
FILTRATION PLANTER INLET, TYP.
BIKE PARKING SHELTER (Campus Standard) 17 Commuter, 39 Covered Spaces
STORMWATER SWALE, TYP. Type: Filtration Planter, See Details. See Note #5
MOUNTABLE CURB
NEW CURB Along 13th Ave.
FILTRATION PLANTER OVERFLOW BIO STREET
PEDESTRIAN ACCESS RAMP
BIKE SHARE 15 Docks
CONCRETE STAIRS With Metal Handrails
POWER AND DATA Recessed in Seat Wall
CONCRETE STAIRS With Metal Handrails
CONCRETE ACCENT BANDS Seed With Recycled Glass
CONCRETE RETAINING WALL Height: Varies Type: 8" thick Finish: Sand Wash
CUSTOM BENCH
CUSTOM BENCH
CUSTOM BENCH
CUSTOM BENCH
EMERGENCY PHONE

SITE PLAN

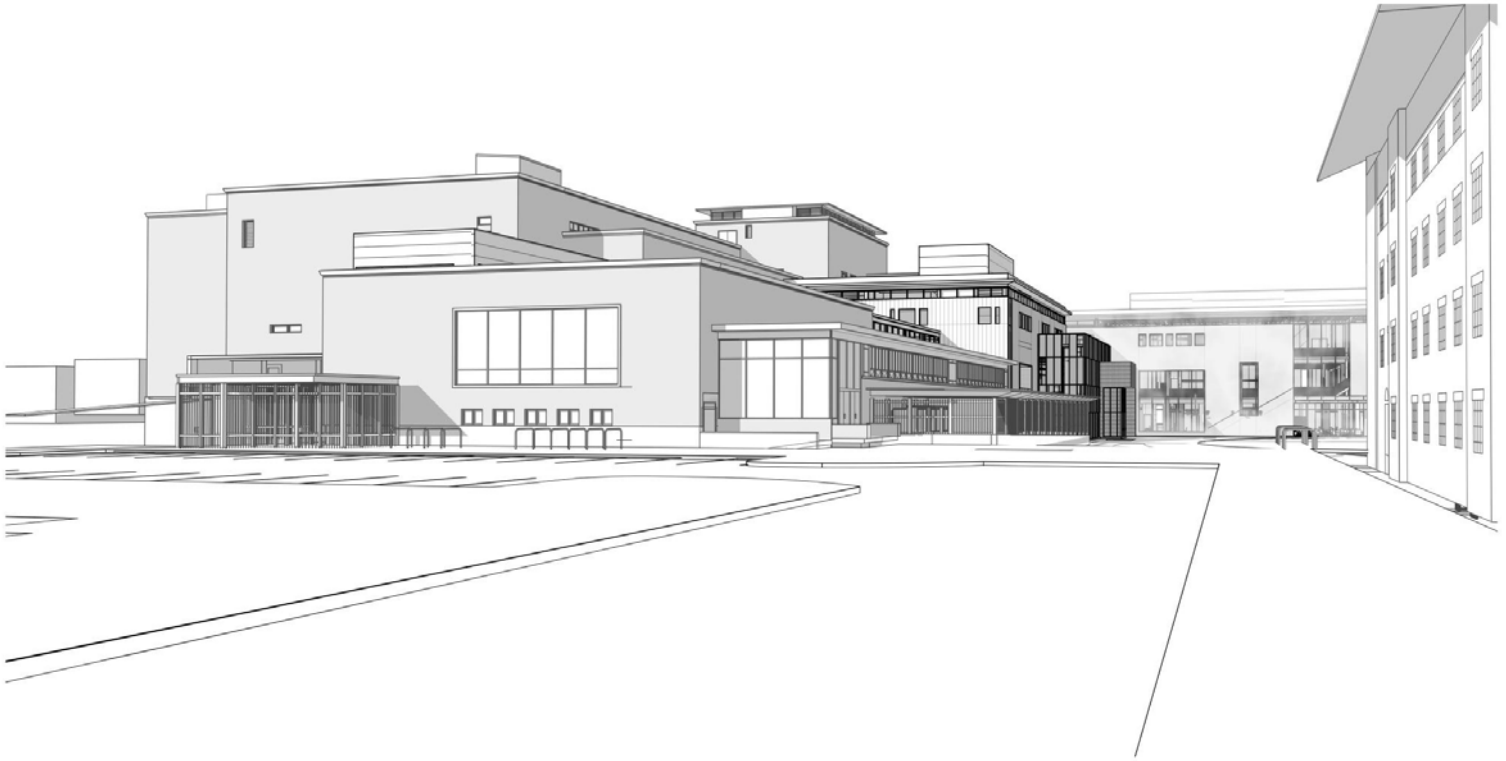


OPTION 1

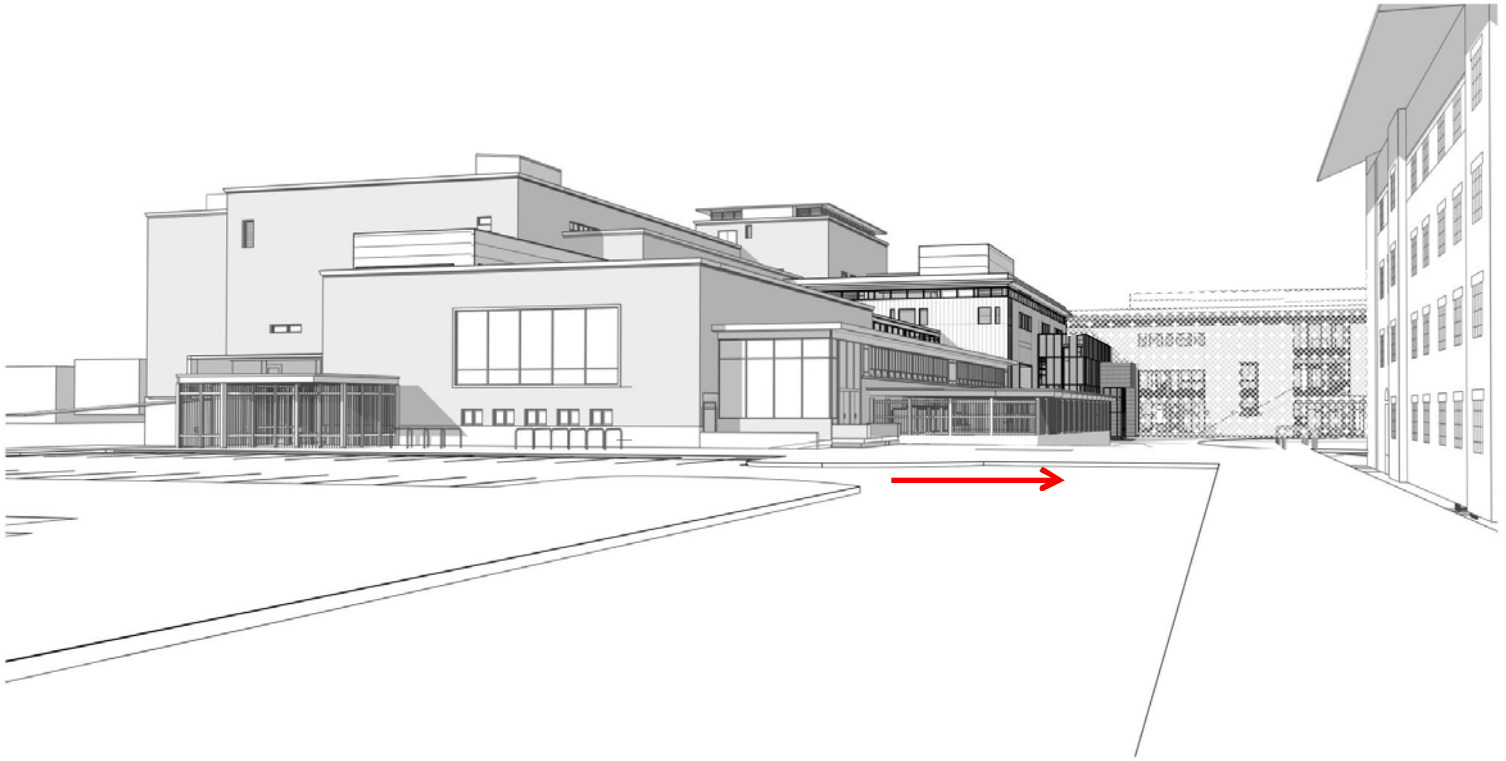


OPTION 2

CRAFT CENTER OUTDOOR OPTIONS

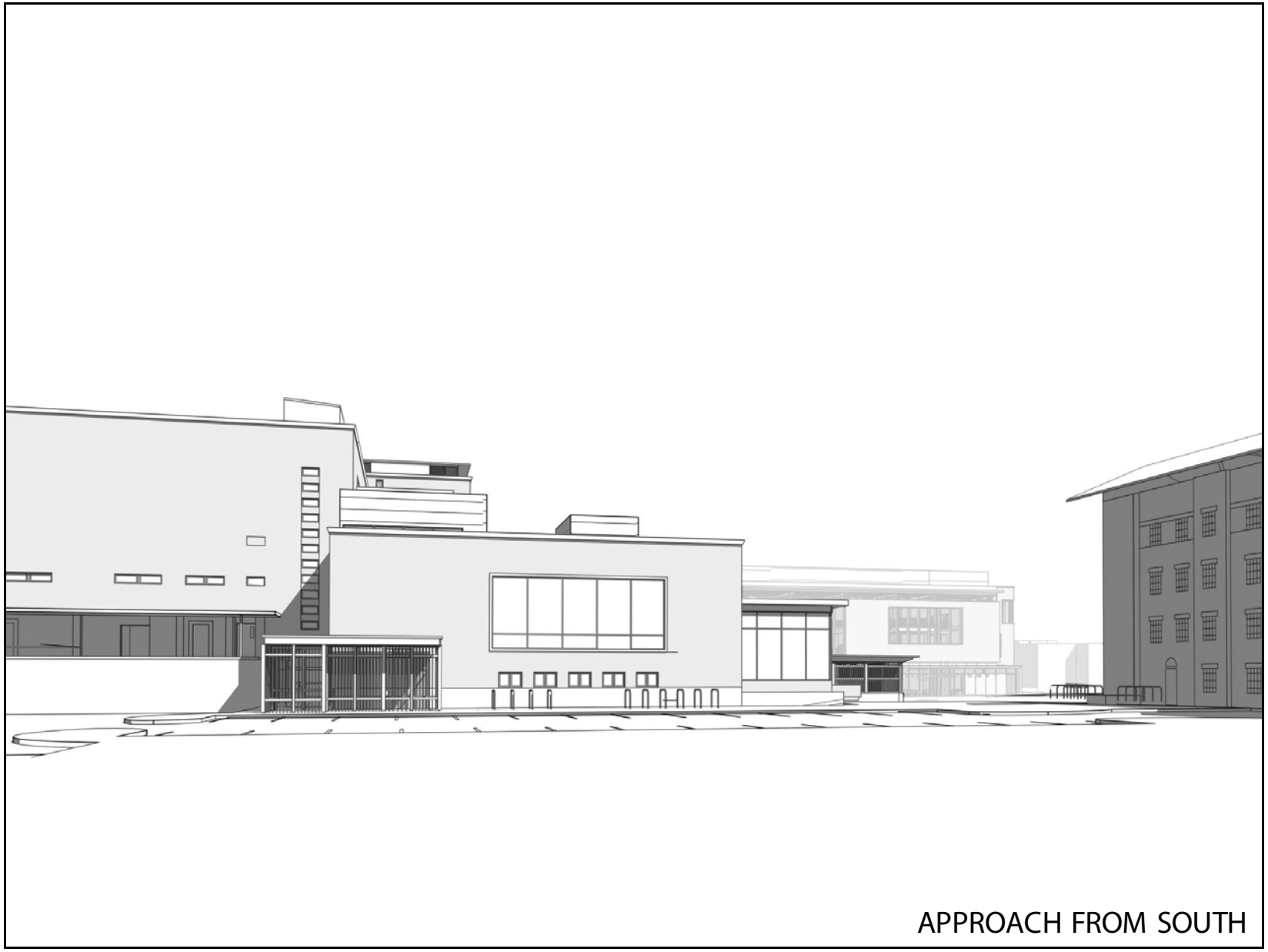


APPROACH FROM STUDENT REC CENTER



APPROACH FROM STUDENT REC CENTER - ALTERNATE

APPROACH FROM EAST

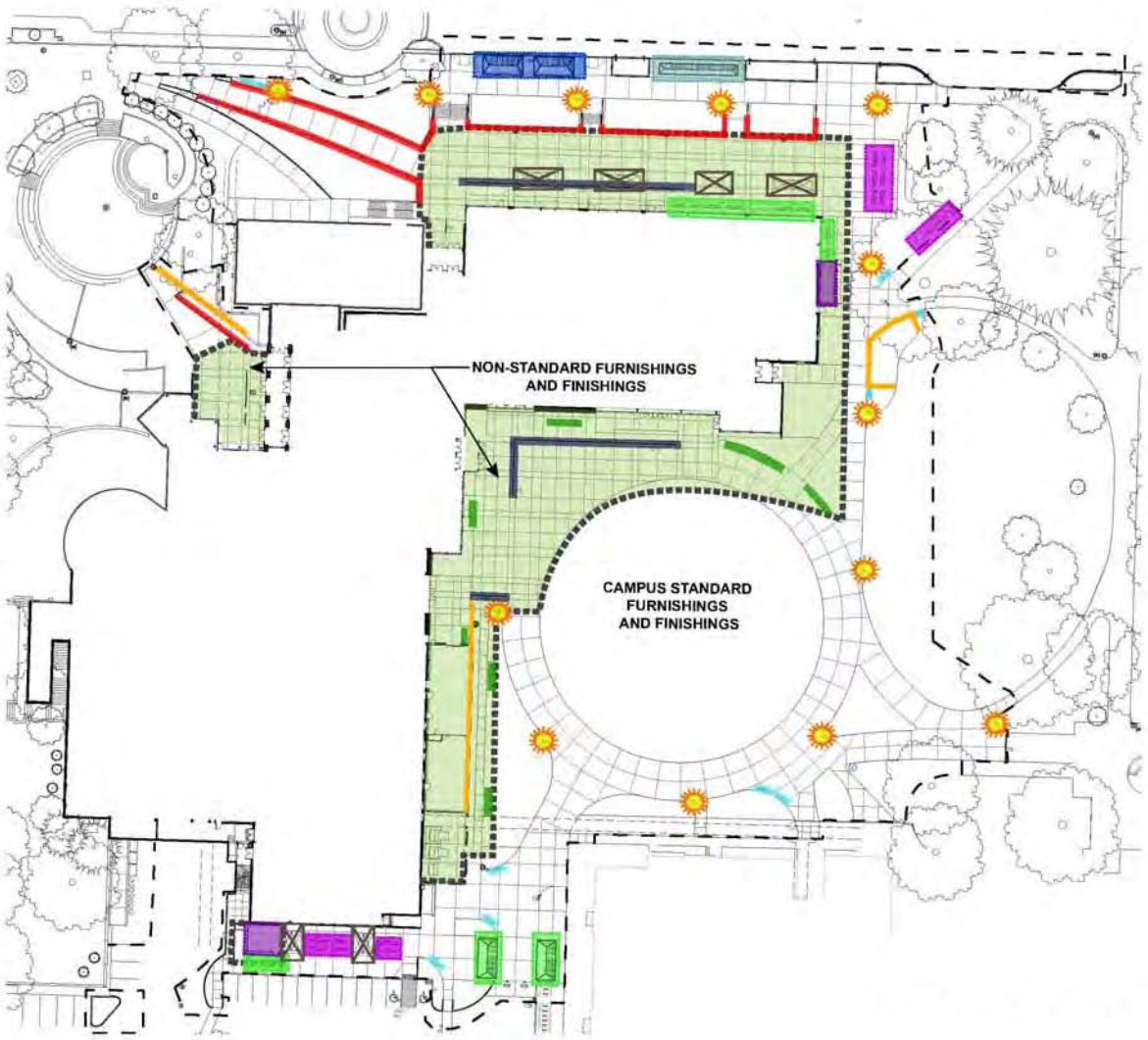


APPROACH FROM SOUTH

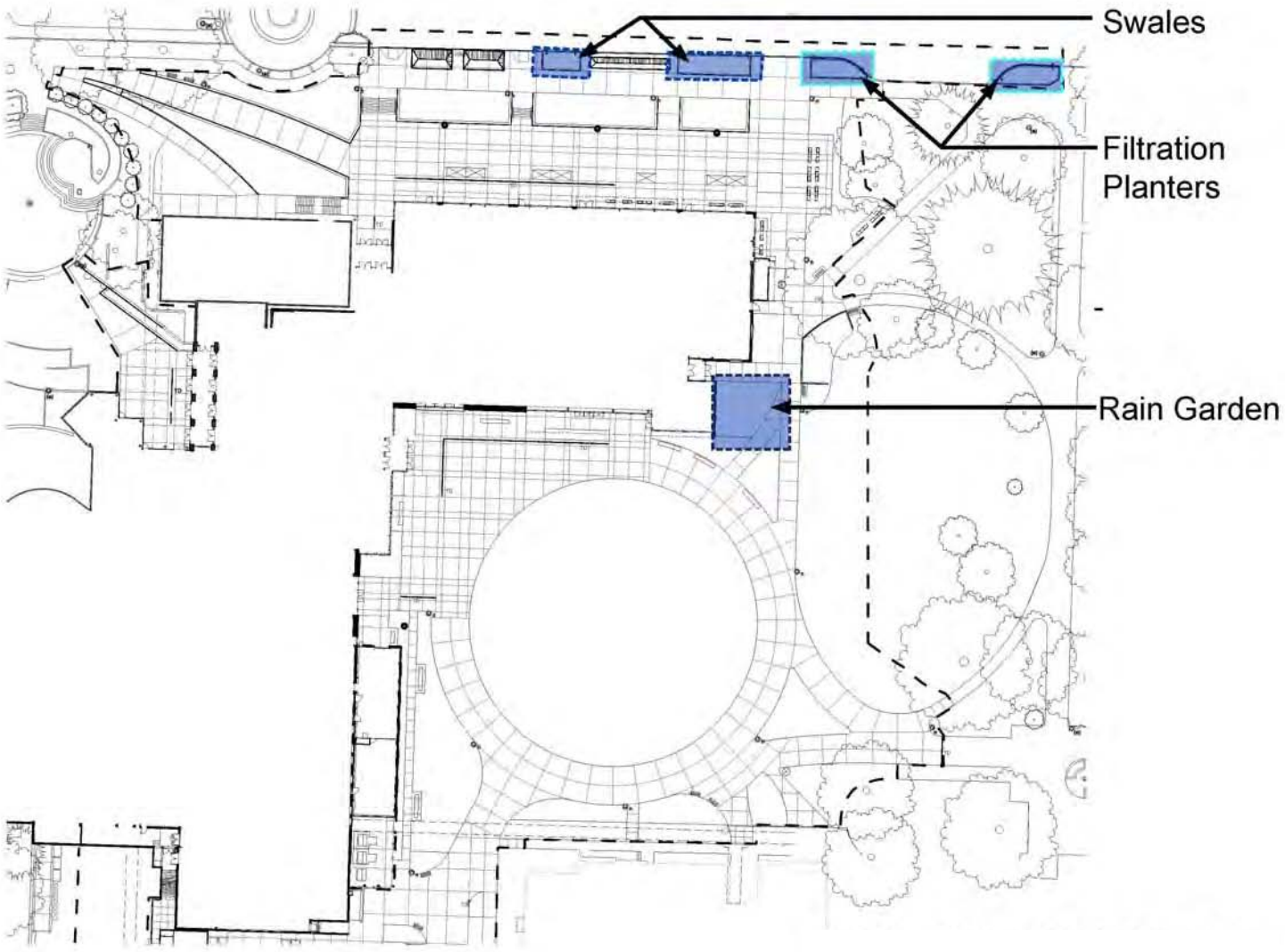
OUTDOOR CRAFT CENTER

OUTDOOR CRAFT CENTER

BIKE SHELTER EAST



SITE FEATURES

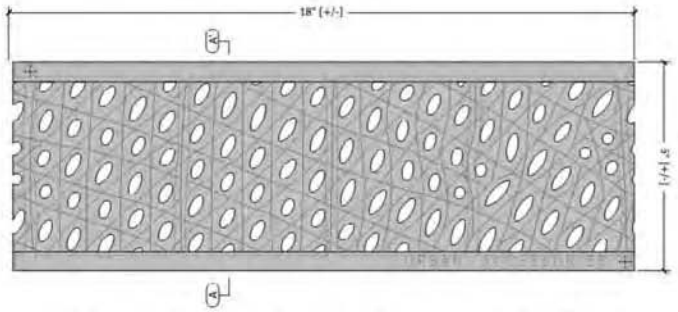


STORMWATER TREATMENT

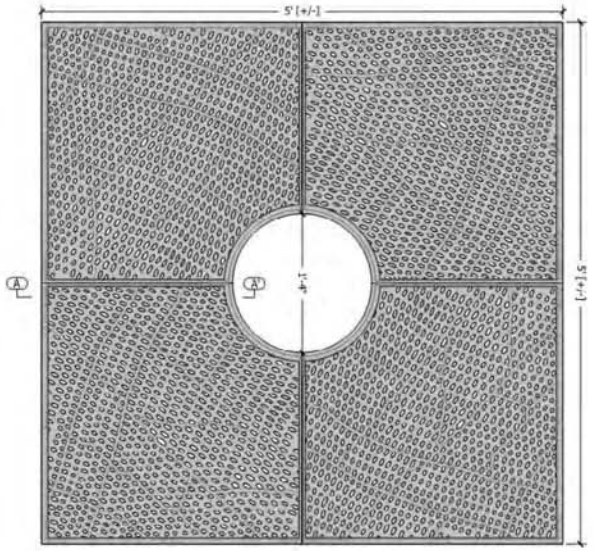
VISCO STANDARD LIGHT -
CAMPUS STANDARD

BENCH - CAMPUS STANDARD

CAMPUS STANDARD

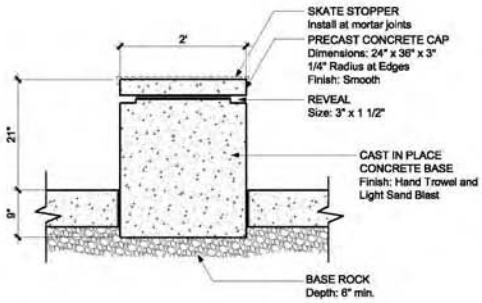


TREE GRATE - NON CAMPUS STANDARD

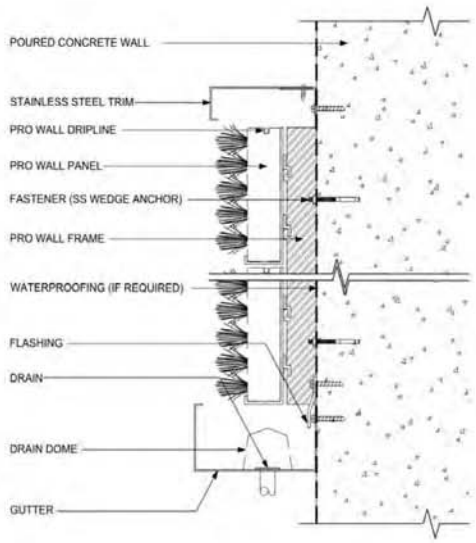


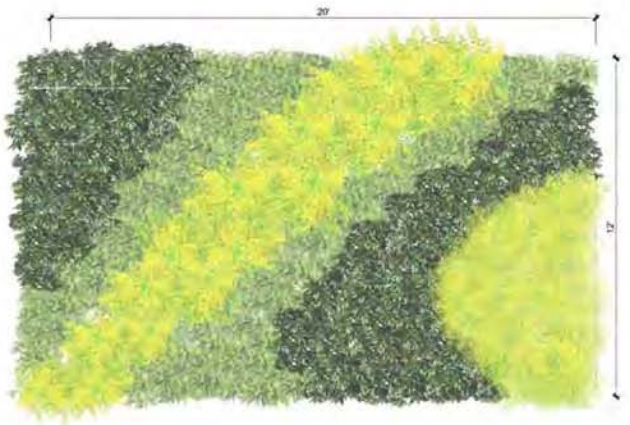
TREE GRATE - NON CAMPUS STANDARD

TREE GRATES & TRENCH DRAIN



BENCH - NON CAMPUS STANDARD

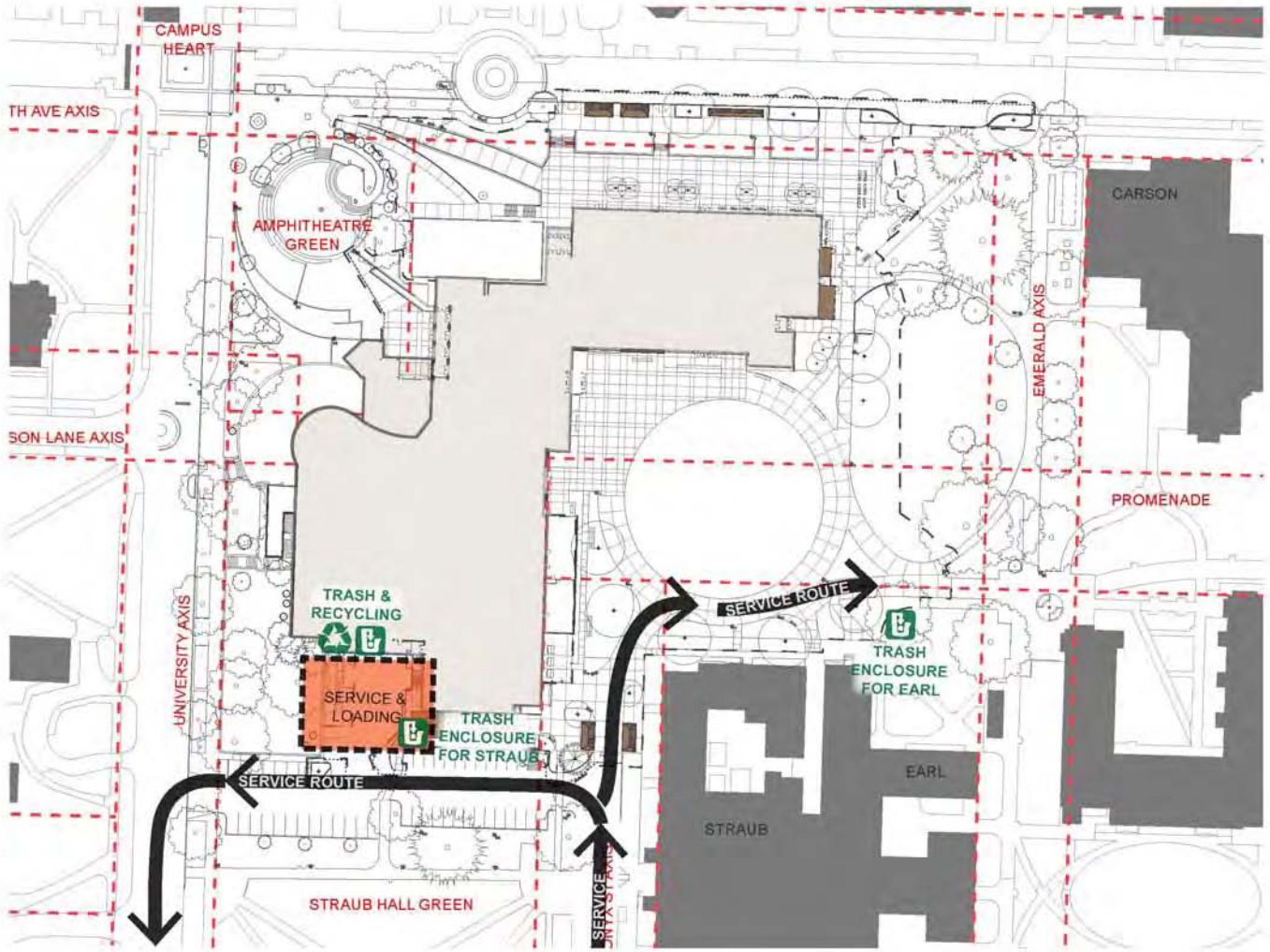




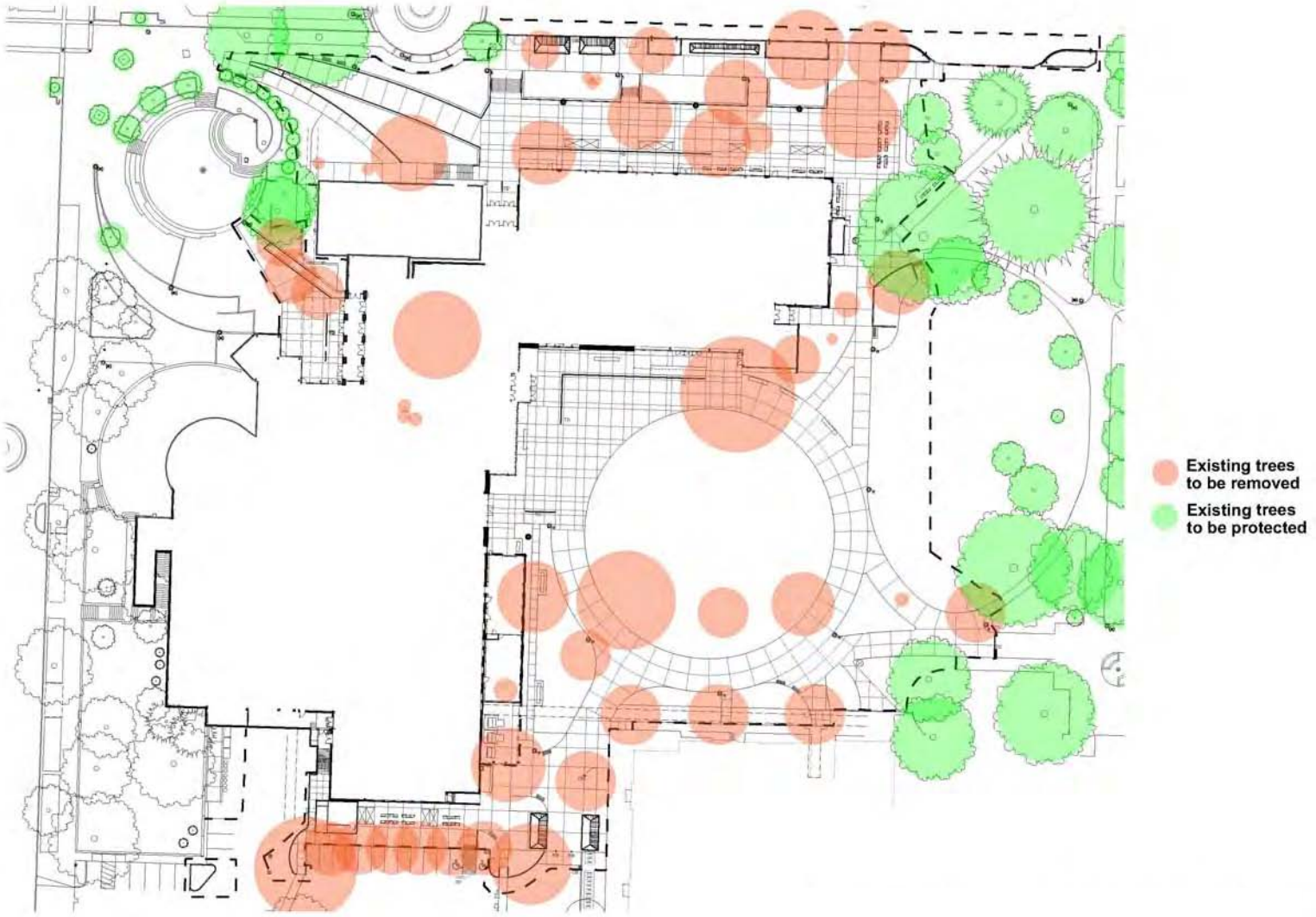
CUSTOM BENCH AND GREEN WALL

NORTH COURT

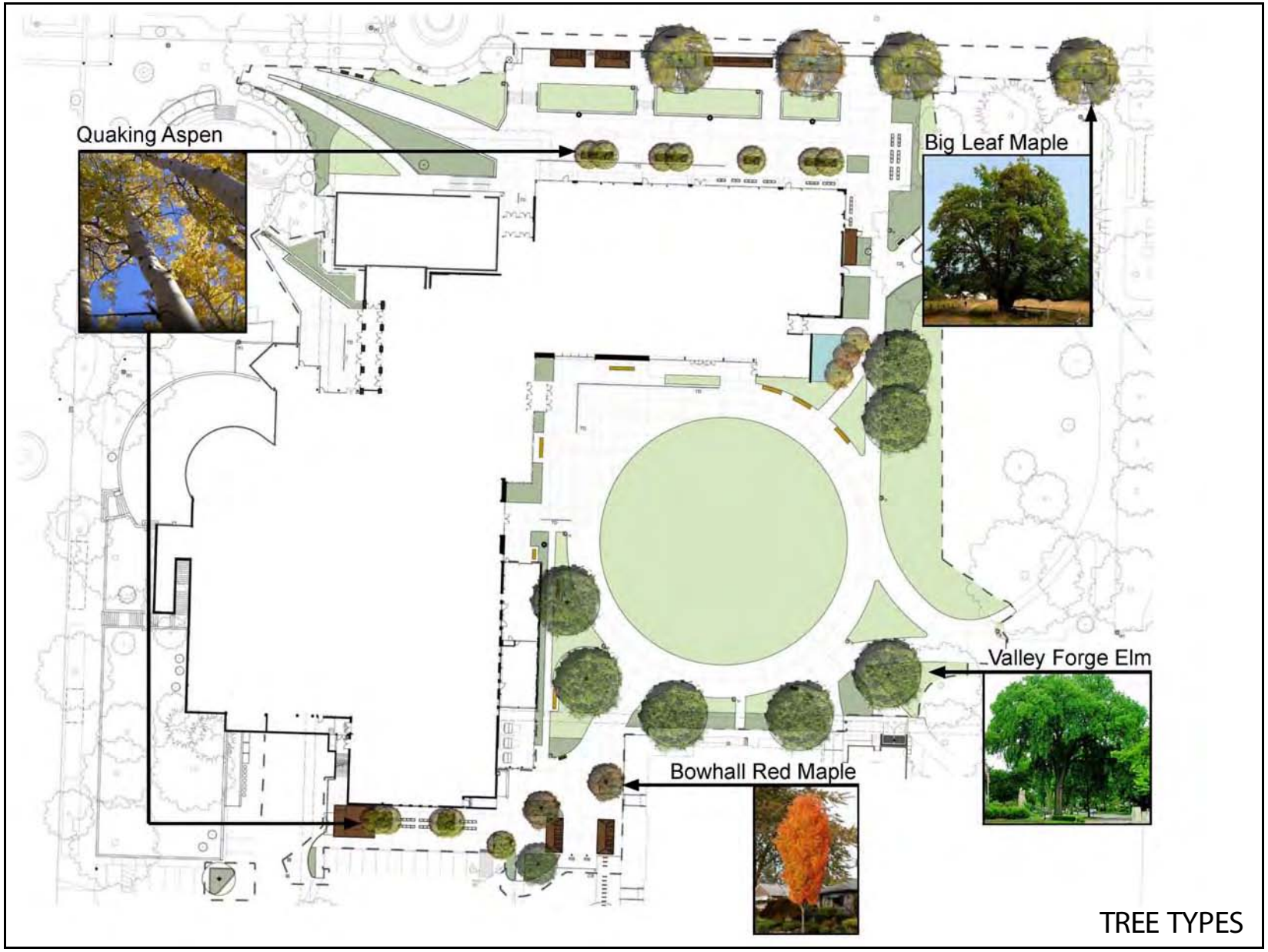
AMPHITHEATER ENTRANCE



SERVICE FEATURES



TREE REMOVAL AND PRESERVATION


Quaking Aspen
Big Leaf Maple
Valley Forge Elm
Bowhall Red Maple
TREE TYPES

THANK YOU!